ORDER NO. MD0205135C1
B12

Service Manual

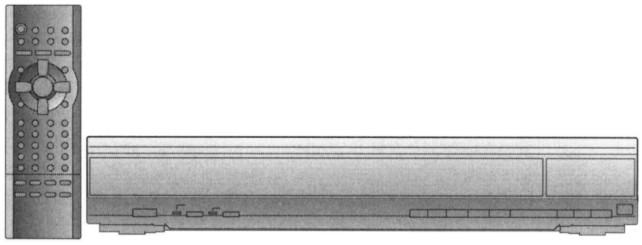
DVD / CD Player

DVD-CP67PP

Colour

(K)... Black Type

(S)... Silver Type



Specification

Signal system: NTSC

Operating tempurature range: + 5 to + 35 ° C (+ 41 to + 95 ° F)

Operating humidity range: 5 to 90 % RH (no condensation)

Discs played [8 cm (3 ”) or 12 cm (5 ”)]:

(1) DVD-Video, DVD-R (DVD-Video compatible)

(2) CD-Audio (CD-DA)

(3) Video CD

(4) CD-R / CD-RW (CD-DA, Video CD formatted discs)

(5) MP3

- Maximum number of tracks and groups recognizable: 999 tracks and 99 groups
- Compatible compression rate: 32 kbps and 320 kbps

(6) WMA

- Maximum number of tracks and groups recognizable: 999 tracks and 99 groups
- Compatible compression rate: 48 kbps or more

Video output:

Output level: 1Vp-p (75 Ω)

Output terminal: Pin jack (1 system)

S video output:

Y output level: 1Vp-p (75 Ω)

C output level: 0.286Vp-p (75 Ω)

Output terminal: S terminal (1 system)

Component video output:

(480P / 480I)

Y output level: 1Vp-p (75 Ω)

P_B output level: 0.7Vp-p (75 Ω)

P_R output level: 0.7Vp-p (75 Ω)

Output terminal: Pin jack

(Y:green, P_B :blue, P_R :red)

Number of terminal: 1 system

Audio output:

Output level: 2Vrms (1kHz, 0dB)

Output terminal: Pin jack

Number of terminal:

2ch: 1 system

Subwoofer output

(0.1ch): 1 system

Audio performance:

(1) Frequency response:

● DVD (linear audio): 4Hz-22kHz (48 kHz sampling)

4Hz-44kHz (96 kHz sampling)

● CD audio: 4Hz-20kHz

(2) S / N ratio:

● CD audio: 115dB

(3) Dynamic range:

● DVD (linear audio): 102dB

● CD audio: 98dB

(4) Total harmonic distortion:

● CD audio: 0.0025 %

Digital audio output:

Optical digital output: Optical terminal

Pickup:

Wave length: 665nm / 790 nm

Laser power: CLASS IIa / CLASS I

Power supply: AC 120 V, 60 Hz

Panasonic

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Power consumption:	12 W	Power consumption in standby mode: approx. 2.5 W
Dimensions:	430 (W) x 406.5 (D) x 75.8 (H) mm	Note:
	[17 ” (W) x 16 ” (D) x 3 ” (H)]	1. Specifications are subject to change without notice.
Mass:	4.5kg (9.9 lb.)	Mass and dimensions are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

CONTENTS

Page

1 Before Repair and Adjustment ··· 2
2 Safety Precautions ··· 3
2.1. General Guidelines ··· 3
3 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices ··· 3
4 Accessories ··· 5
5 Precaution of Laser Diode ··· 5
6 Handling Precaution for Traverse Deck ··· 6
6.1. Handling of optical pickup ··· 6
6.2. Grounding for electrostatic breakdown prevention ··· 6
7 Optical Pickup Self-Diagnosis and Replacement Procedure ·· 7
8 Self-Diagnosis Function and Service Mode ··· 8
8.1. New servicing method for DVD player (5th generation models) ··· 8
8.2. How to use recovery disc ··· 9
8.3. Fault diagnosis using new self-diagnosis function ··· 10
8.4. Overview of each function ··· 11
8.5. Service Mode Table 1 ··· 13
8.6. DVD Self-Diagnosis Function-Error Code ··· 13
8.7. Last Error Code saved during NO PLAY ··· 14
8.8. Self-Diagnosis Function and Service Mode ··· 15
8.9. Service Mode Table 2 ··· 16
8.10. Servo Process Flow ··· 18
8.11. Servo Process Display Mode ··· 19
8.12. ADSC Internal RAM Data Display ··· 19
8.13. Sales demostration lock function ··· 20
8.14. Service Precautions ··· 20
8.15. Handling After Completing Repairs ··· 20
9 Electrical Adjustment ··· 21
9.1. Video Output (Brightness Signal) adjustment ··· 21
9.2. Video Output (Colour Signal) adjustment ··· 21
10 Operation Procedure ··· 22
11 Procedure for reparing the set ··· 23
11.1. Distinguish the trouble cause ··· 24

Page

11.2. Diagnosis of Optical Pick-up Unit ··· 25
12 Disassembly and Main Component Replacement Procedures ··· 27
12.1. Disassembling the Top Cover ··· 27
12.2. Disassembling the Front Panel ··· 27
12.3. Disassembling the Tray Assembly ··· 28
12.4. Disassembling the Clamp Plate Assembly ··· 28
12.5. Disassembling the Fixed Plate, Magnet and Clamper ··· 29
12.6. Disassembling the Rear Panel ··· 29
12.7. Checking for major P.C.B.. ··· 29
12.8. Disassembling the Middle Chassis ··· 30
12.9. Terminal P.C.B. ··· 31
12.10. Traverse Gear ··· 31
12.11. Optical Pickup Unit ··· 32
12.12. Disassembling the Spindle Motor Unit ··· 32
13 Adjustment Procedures ··· 33
13.1. Service Tools and Equipment ··· 33
13.2. Important points in adjustment ··· 33
13.3. Storing and Handling Test Discs ··· 33
13.4. Optical adjustment ··· 33
14 Terminal Function of IC ’ s ··· 35
14.1. IC6001 (MN101C35DCN) System Microprocessor ··· 35
15 Block Diagram ··· 36
16 Schematic Diagram ··· 43
17 Printed Circuit Board ··· 68
18 Wiring Connection Diagram ··· 76
19 Parts Location and Replacement Parts List ··· 77
19.1. Loading Mechanism and Traverse Unit ··· 78
19.2. Cabinet ··· 80
19.3. Component Parts List ··· 83
19.4. Packing Materials & Accessories Parts List ··· 90
19.5. Packaging ··· 90
20 Additional Contents ··· 91
20.1. Differences of Spindle Motor Assembly (RXQ0749B) ··· 91

1 Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C1011 & C1012 through a 10 Ω, 5W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.

After repairs are completed, restore power gradually using a variac, to avoid overcurrent.

Current consumption at AC 120V, 60Hz in NO SIGNAL mode should be ~232 mA .

2 Safety Precautions

2.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to thechassis, the reading should be between 1MΩ and 5.2MΩ.

   When the exposed metal does not have a return path to the chassis, the reading must be ∞.

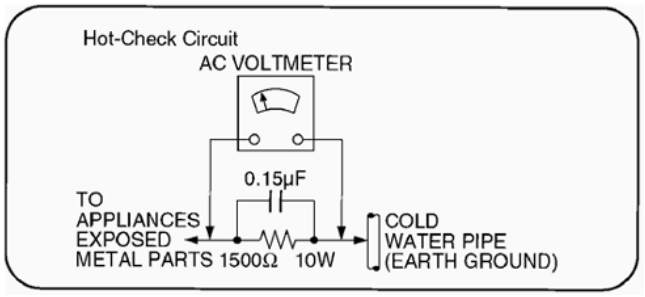


Figure 1

2.1.2. Leakage Current Hot Check (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15µF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 phms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is out ofthe limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

3 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistorsand semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equiped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, whichshould be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equiped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder remover device. Some solder removal devices not classified as “anti-static (ESD protected)” can generate electrical charge to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil orcomparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

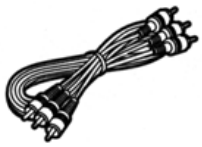
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD)sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

4 Accessories

AC Power Supply Cord



Audio/Video Cable

Remote Control

5 Precaution of Laser Diode

CAUTION :

This unit utilizes a class 1 laser.

Invisible laser radiation is emitted from the optical pickup lens.

When the unit is turned on :

1. Do not look directly into the pick up lens.
2. Do not use optical instruments to look at the pick up lens.
3. Do not adjust the preset variable resistor on the pickup lens.
4. Do not disassemble the optical pick up unit.
5. If the optical pick up is replaced, use the manufacturer's specified replacement pick up only.
6. Use of control or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

6 Handling Precaution for Traverse Deck

The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body.

So be careful of electrostatic break down during repair of the optical pickup.

6.1. Handling of optical pickup

1. Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.
2. Cut the optical unit FPC at the point as shown when replacing a new optical unit. When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

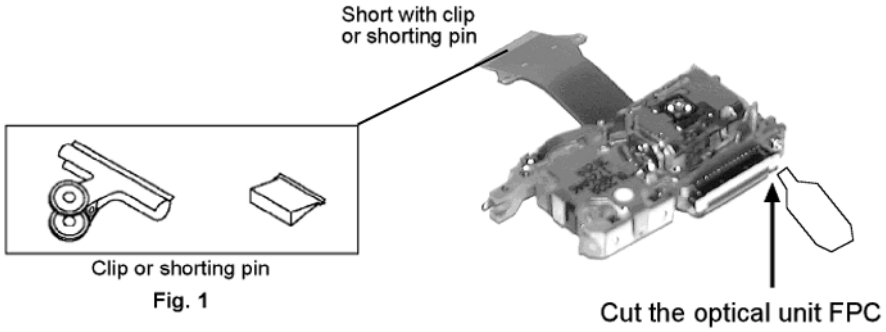


Fig. 1

6.2. Grounding for electrostatic breakdown prevention

1. Human body grounding

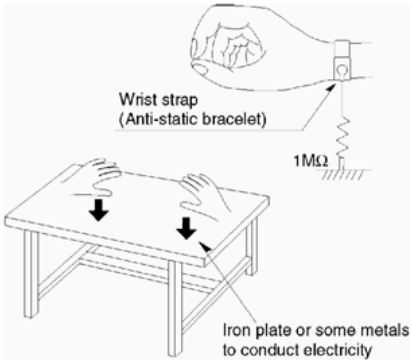
   Use the anti-static wrist strap to discharge the static electricity from your body.

2. Work table grounding

   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution :

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



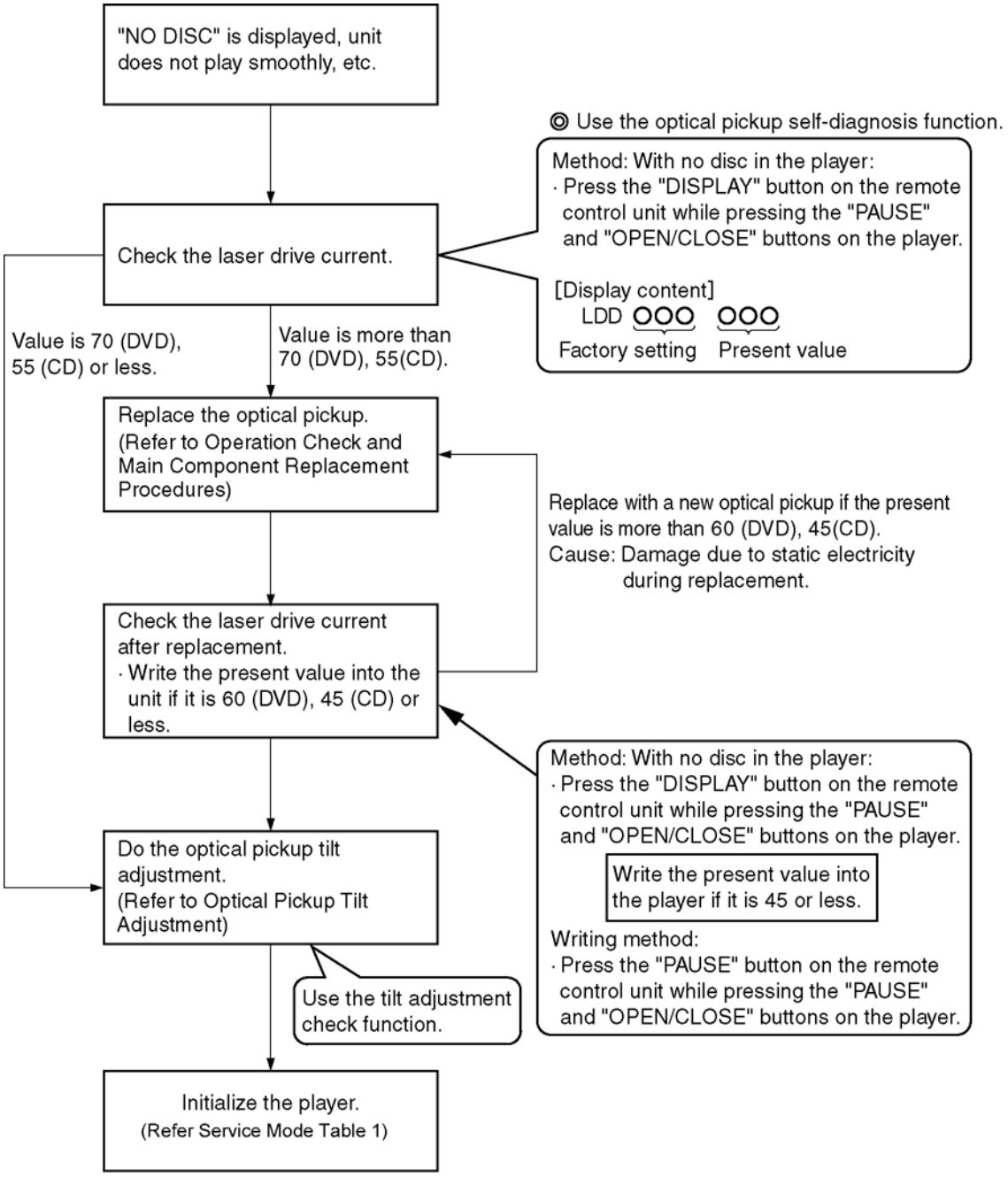
7 Optical Pickup Self-Diagnosis and Replacement Procedure

The optical pickup self-diagnosis function and tilt adjustment check function have been newly added to this player. When repairing, use the following procedure for effective Self-diagnosis and tilt adjustment.

Be sure to use the self-diagnosis function before replacing the optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup when the value of the laser drive current is more than 55.

Note

Press the power button to turn on the power and check the value before the unit warms up (within three minutes).


"NO DISC" is displayed, unit does not play smoothly, etc.
◎ Use the optical pickup self-diagnosis function.
Method: With no disc in the player:
· Press the "DISPLAY" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
[Display content]
LDD OOO OOO
Factory setting Present value
Check the laser drive current.
Value is 70 (DVD), 55 (CD) or less.
Value is more than 70 (DVD), 55(CD).
Replace the optical pickup. (Refer to Operation Check and Main Component Replacement Procedures)
Replace with a new optical pickup if the present value is more than 60 (DVD), 45(CD).
Cause: Damage due to static electricity during replacement.
Check the laser drive current after replacement.
· Write the present value into the unit if it is 60 (DVD), 45 (CD) or less.
Method: With no disc in the player:
· Press the "DISPLAY" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
Write the present value into the player if it is 45 or less.
Writing method:
· Press the "PAUSE" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
Do the optical pickup tilt adjustment. (Refer to Optical Pickup Tilt Adjustment)
Use the tilt adjustment check function.
Initialize the player. (Refer Service Mode Table 1)

8 Self-Diagnosis Function and Service Mode

8.1. New servicing method for DVD player (5th generation models)

With the 5th generation models new self-diagnosis function and new servicing method described below are additionally available.

8.1.1. Firmware updating and recovery with disc

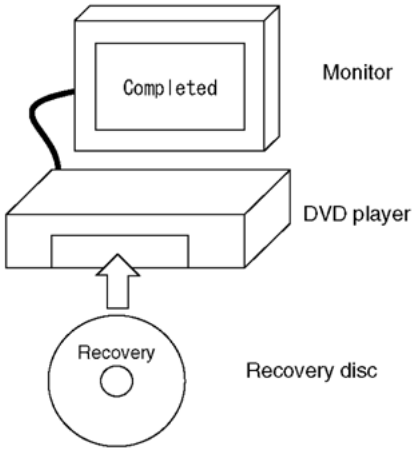
- Recovery
- Firmware updating

Simply run the recovery disc. Then both of the above operations are automatically performed.

Commercially available CD-R can now perform updating and recovery process, making it easier to update the version.

Recovery process: Optimization of player after replacement of FROM, EEPROM and modular P.C.B.

Version updating: Firmware updating for improved operability and performance.



8.1.2. New self-diagnosis function

- Cumulative operation time display function (Spindle motor and DVD/CD laser)
- Servo process display function
- ADSC internal RAM display function
- Other: Increased number of last errors storage

  1 event → 20 events

Utilization of the above functions,in combination with servicing procedures, is expected to contribute to higher efficiency of fault diagnosis.

[Purpose]

Operation time display function: For faultfinding of spindle motor or laser that has limited service life

Servo process: For fault diagnosis of player startup malfunction

ADSC internal RAM display function: For faulty part identification in servo system using the learned values

8.2. How to use recovery disc

8.2.1. Performing recovery

1. Load the recovery disc RFKZD5TR006 on to the player and run it.
2. Recovery is performed automatically. When it is finished, a message appears on the screen.
3. Press “Disc Exchange” button.
4. Remove the recovery disc.
5. Turn off the power.

8.2.2. Updating firmware

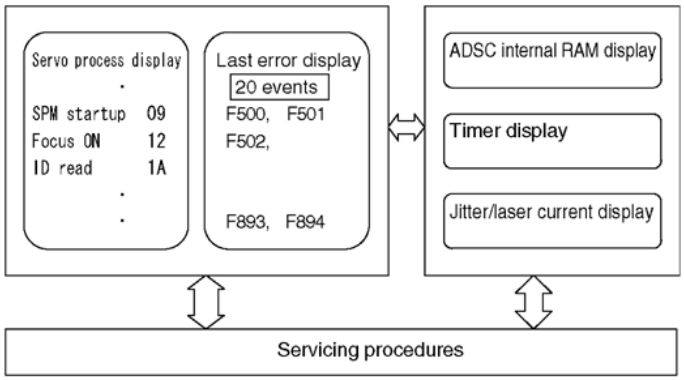
1. Load the recovery disc RFKZD5TR006 SPC on to the player and run it.
2. Firmware version of the player is automatically checked. Approriate message appears whenever necessary.
3. Using remote controller’s cursor key, select whether version updating is to be done or not. (selection of Yes/No)
4. a. If Yes is selected, version updating is performed.
   b. If No is selected, only recovery is performed.
5. a. When updating is finished, remove the disc according to the message appearing on the screen.
   b. Remove the disc according to the message appearing on the screen. (Press “Disc Exchange” button to eject the tray).
6. Turn off the power.

8.3. Fault diagnosis using new self-diagnosis function

The 5th generation DVD players have the additional new service modes as described above to further reinforce the diagnosis function.

These new functions are unable to bring sufficient results when they are used alone.

Effective fault diagnosis can be expected when multiple diagnostic methods are properly combined in accordance with the servicing procedures depending on specific fault status.



*New servicing procedures are now under study to match with the newly developed self-diagnosis functions introduced here.

Details of the new servicing procedures will be informed from time to time.

1. Cumulative operation time display function

   For spindle motor and DVD/CD laser, the cumulative operation time is displayed.

   When servicing, check the timer display and use it as information for fault diagnosis.

   At the time of repair and replacement of these components, make sure to check the operation time and reset the timer after replacement.

   Operation time of the replacement parts (spindle motor and laser) is the valuable information as actual data for future product quality.

   Please save the records and supply information to us.

2. Servo process display function

   This additional function is intended to improve efficiency of fault diagnosis, especially for the player's startup failure, in combination with the learned value data of ADSC internal RAM.

3. ADSC internal RAM display function

   The function is to display the internal RAM data of ADSC servo processor.

   The RAM data are the learned values of drive servo, memorizing those concerning focus and tracking, as well as data slice and equalizer.

   * This function is also a newly developed service mode. Its full utilization is still under study.

4. Others

   ・Increased number of last errors stored.

     1 event → 20 events

     Focus drive value display function

8.4. Overview of each function

8.4.1. Cumulative operation time display

1. Operation/display

DVD/CD laser operation time
Unit: 10 hours in decimal notation

Spindle motor operation time
Unit: 10 hours in decimal notation

Note: You may have to press the “FL select” button on the remote control to view the remaining text when the text is too long to display on the FL at one time.

Key operations are as follow:

Laser operation time ..... In STOP mode, main unit PAUSE+FWD-SKIP+ remote controller [5]

Spindle motor operation time ..... In STOP mode, main unit PAUSE+FWD-SKIP+ remote controller [6]

To reset the timer, perform the following while displaying the time with above key operation.

Laser operation time ..... In STOP mode, main unit STOP+FWD-SKIP+ remote controller [5]

Spindle motor operation time ..... In STOP mode, main unit STOP+FWD-SKIP+ remote controller [6]

2. How to utilize

Reference information in fault diagnosis of laser or spindle motor system.

Review of fault point in repeated repair

8.4.2. Servo process display

1. Operation/display

While the player is in STOP mode, perform the specified key operation to display the servo process number on FL.

When the display does not change from the error indication, press Open/Close key to show the servo process number.

Key operation: In STOP mode, main unit PAUSE+FWD- SKIP+ remote controller [7].

Number to the left ..... Process number when halted
Number to the right ..... Process number in progress

8.4.3. ADSC internal RAM display function

1. Operation/display

Key operation: Main unit PAUSE+OPEN + remote controller [RETURN]. Operate the remote controller [CLEAR] key to update internal RAM address and display 11 learned values.

Table 1 shows the descriptions of the display.

2. How to utilize

At present, learned values of ADSC internal RAM are expected to be useful for the following faulty part identification.

Use how learned value changes from initial value to find whether faulty part exists before or after ADSC in the focus/tracking servo system.

[Focus system]

When focus gain remains at initial value and tracking gain changes, fault exists before ADSC input.

When focus gain changes and tracking gain remains at initial value, fault exists after ADSC output.

{Tracking system]

When focus gain remains at initial value and tracking gain changes, fault exists before ADSC output.

When focus gain changes and tracking gain remains at initial value, fault exists after ADSC input.

Table 1 ADSC internal RAM learned value

Address	Memory data	Data range	Standard value
4B4	Focus gain learned value except for DVD DL (L1 layer)	0040h~0800h	200h

Address	Memory data	Data range	Standard value
4BC	Focus gain learned value of DVD DL (L1 layer)	0040h~0800h	200h
4B6	Focus balance learned value except for DVD DL (L1 layer)	B000h~5000h	0000h
4BE	Focus balance learned value of DVD DL (L1 layer)	B000h~5000h	0000h
4B5	Tracking gain learned value except for DVD DL (L1 layer)	0040h~0800h	200h
4BD	Tracking gain learned value of DVD DL (L1 layer)	0040h~0800h	200h
TB0	Tracking balance learned value of DVD SL and DL (L0)	0060h~FFA0h	0000h
	Tracking balance learned value of CD and VCD	B000h~5000h	0000h
TB1	Tracking balance learned value of DVD DL (L1 layer)	FFA0~0060h	0000h
DBD	DSL offset learned value of DVD	9000h~F000h	
DBC	DSL offset learned value of CD and VCD	9000h~F000h	
FC0	Equalizer FC value except for DVD DL (L1 leyer)	0000h~0004h	
BT0	Equalizer BOOST value except for DVD DL (L1 layer)	0000h~0004h	
FC1	Equalizer FC value of DVD DL (L1 leyer)	0000h~0004h	
BT1	Equalizer BOOST value of DVD DL (L1 layer)	0000h~0004h	

Notes:

1. Learned values of focus balance and tracking balance are the coded binary data.
2. DSL offset learned value is effective only in upper 2 digits. (Lower 2 digits, normally 06, are ignored.)

Picking up servo learned value (Determined)

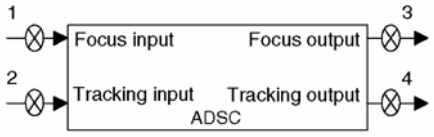
1. Focus (primary)/tracking balance learning ... When leading in focus
2. Focus/tracking gain and equalizer ... When leading in tracking
3. Focus balance (secondary) ... When leading in tracking

[Note]

When fault exists somewhere after tracking servo, the disc type is switched by retry to make learned value different from the one in normal startup.

Initial learned value: Gain = 0200
Balance = 0000
DSL = C406/CC06 (Differs depending on P.C.B.)
Equalizer = 0000

Equalizer value is entered when RF signal is sent out.
When focus/tracking servo system circuit is faulty, the gain learned value changes from initial value as follows.



Disconnection point →	1	2	3	4
Focus gain	0200	00A0	00A0	0200
Tracking gain	0400	0200	0200	0400

Examples of ADSC internal RAM learned value display

8.5. Service Mode Table 1

The service modes can be activated by pressing various button combination on the player and the remote control unit.

Player buttons	Remote control unit buttons	Application	Note
PAUSE + OPEN/CLOSE	0	Displaying the UHF display F _ _ _	Refer to section 8.6. Self-Diagnosis Function (UHF Display)
	5	Jitter check, tilt adjustment *Display show J_xxx_yyy_zz "yyy" and "zz" shown to the right have nothing to do with the jitter value. "yyy" is theerror counter, while "zz" is the focusdrive value. Refer to Section 10.4. for Optical Pickup Tilt Adjustment Procedure.	Refer to Section 13.4. Optical Pickup Tilt Adjustment.
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check the IC6302 FLASH ROM program.
	9	Lighting Confirmation Function of Display Tube	
	DISPLAY	Checking the laser drive current	Refer to Section 7. Optical Pickup Replacement Procedure
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)	
PAUSE SKIP/SEARCH<< OPEN/CLOSE		Initializing the DVD player (restoring factory preset settings) *Use when replacing a microprocessor, microprocessor peripheral, or P.C.B.	

8.6. DVD Self-Diagnosis Function-Error Code

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3	Defect 4
	U, H error					
U11	Focus error					
H01	Tray loading error					
H02	Spindle servo error	(Spindle servo, DSC SP motor, CLV servo error)				
H03	Traverse servo error					
H04	Tracking servo error					
H05	Seek error					
H06	Power error	Cannot switch off the power because of the panel and system computer communication error				
H07	Spindle motor drive error		Spindol motor	Drive IC		
	DSC related					
F500	DSC error	DSC stops in the occurence of servo error (startup, focus error, etc)	OPU	ADSC	FEP	servo drive
F501	DSC not Ready	DSC-system computer communication error (Communication failure caused by idling of DSC)	ADSC	CPU		
F502	DSC Time out error	Similar disposal as F500	OPU	ADSC	FEP	servo drive
F503	DSC communication Failure	Communication error (result error occured although communication command was sent)	ADSC	FEP	EEPROM	
F505	DSC Attention error	Similar disposal as F500	OPU	ADSC	FEP	servo drive
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc	DISC	FEP	ADSC	ODC
	ODC related					
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect	ODC	FEP	ADSC	
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data	ODC	FEP	ADSC	
F602	Access failure to LEAD IN caused by demodulation error	LEAD IN data unreadable				
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc				
F610	ODC abnormality	No permission for command execution	ODC			
F611	6626 QCODE don't read error	Access failure to seek address in CD series	ODC			
F612	No CRC OK for a specific time	Access failure to ID data in DVD series	ODC			
F630	No reply to KEY DET enquiry	(for internal use only)				

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3	Defect 4
F631	CPPM KEY DET is not available till the FILE terminal	(CCPM file system in unreadable caused by scratches)	DISC	CPPM		
F632	CPPM KEY DET is not available	Been revoked or falsified	DISC	EEPROM	CPPM	
	Disc Code					
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display	DISC			
	I^2C Error					
F4FF	Force initializing failure (Time out)		EEPROM	CPU	FEP	ADSC
	Micro computer error					
F700	MBX overflow	When replying message to disc manager				
F701	Message command does not end	Next massage is sent bafore replying to disc manager				
F702	Message command changes	Message is changed before it is sent as a reply to disc manager				
F880	Task number is not a appropriate	Message coming from a non-existing task				
F890	Sending message when message is being sent to AV task	Sending message to AV task				
F891	Message couldn't be sent to AV task	Begin sending message to AV task				
F893	FROM falsification		FROM	CPU		
F894	EEPROM abnormality		EEPROM	Serial communica tion on lone		
F895	Jumper Error	abnomal combination of the FROM and Jumper not fit the Language and firm	FROM	Jumper		
F896	Jumper Error	No existing model cannot find the Setup Table	Jumper			
F897	No Initialized					
F8A0	Message command is not appropriate	Begin sending messgae to AV task				

8.7. Last Error Code saved during NO PLAY

Error Code	Error Content	System computer	Setting task	System computer internal error code
F0BF	6) Cannot playback because physical layer is not recognizable	PCND_NOPLAY PHYSICAL 0x50	DriveManager	0xDOBF
F0C0	8) DVD: Cannot playback because it is not DVD Video/Audio/VR	PCND_NOPLAY VIDEO 0x70	DiscManager	0xDOC0
F0C1	9) DVD Prohibited by the restricted region code	PCND_NOPLAY RCD 0x80	DiscManager	0xDOC1
F0C2	A) DVD: PAL restricted playback	PCND_NOPLAY PAL 0x90	DiscManager	0xDOC2
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title	PCND_NOPLAY PTL 0xA0	DiscManager	0xDOC3
F0C4	C) VCD: Prohibited bacause it is in PHOTO CD format	PCND_NOPLAY PHOTO CD 0xB0	DiscManager	0xDOC4
F0C5	VCD/CD: Prohibited because it is CDROM without CD-DA	PCND_NOPLAY CDROM 0xC0	DiscManager	0xDOC5

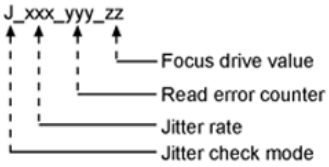
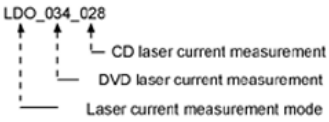
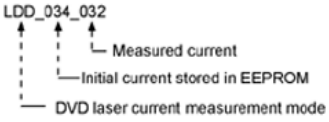
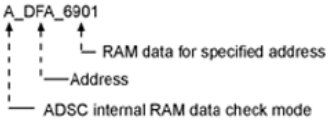
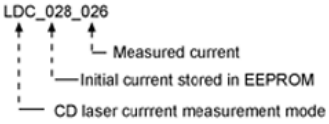
8.8. Self-Diagnosis Function and Service Mode

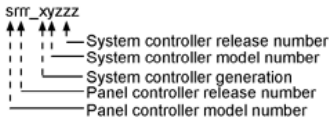
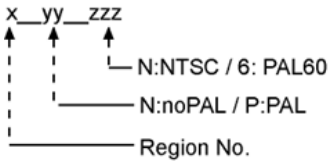
Improving the self-diagnosis function
The self-diagnosis function in our DVD player currently in use is improved as follows:

Our DVD player currently in use	Our new DVD	
UHF error display The latest error storage function n=1	UHF error display The latest error storage n=20	The storage capacity is increased.
Jitter/read error display	Jitter/read error display Focus drive value display	The focus drive current value can be displayed.
Laser drive current display For DVD	Laser drive current display For DVD/CD	
	ADSC internal RAM data display	The servo learning value stored in the RAM data inside the ADSC (servo controller) IC is displayed.
	Servo process display	Mainly in the initial starting operation period of the player, a number is allotted to the servo process of each step, and the process of the starting operation can be displayed.
	Total operation time display SP motor Laser (DVD/CD)	The operation times of SP motor and the laser (both for the DVD and CD) can be displayed).

8.9. Service Mode Table 2

Pressing various button combinations on the player and remote control unit can activate the service modes.

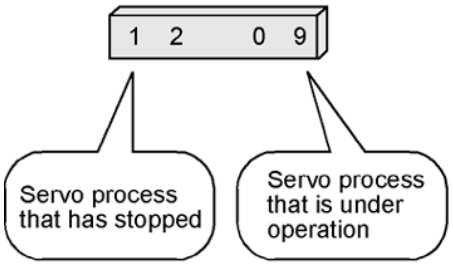
Item	Player mode and button combination	Function	Display	Cancellation method
Jitter check	In PLAY mode, press PAUSE and OPEN buttons on the player, and “5” button on the remote control unit.	Jitter check. Jitter check is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be readout, the counter advances by one increment. When the failure is caused by mirror error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the countermay jump by two or more.	 Jitter rate is shown in decimal notaiton to one place of decimal. Focus drive value is shown in hexadecimal notation.	Press STOP or OPEN button.
Error code check	In ** mode, press PAUSE and OPEN buttons on the player, and “0” button on the remote control unit. *With pointing of cursor up and down on display, the panel controllerswitches serial number of history and sends out the command accordingly.	Error code check. The latest error code stored in EEPROM is displayed.	Error code (play_err) is expressed in the following convention. Error code=0 xDAXX is expressed: → nn UXX Error code= 0 x BDXX is expressed: → nn HXX Error code= 0x DXXX is expressed: → nn FXXX Error code= 0 x 0000 is expressed: →nn F-- * “nn” denotes the serial number of history.	Cancelled automatically 5 seconds later
Initial setting of laser drive current	In STOP mode, press PAUSE and OPEN buttons on the player, and PAUSE button on the remote control unit.	Initial setting of laser drive current initial current value for each of DVD laser and CD laser is separately saved in EEPROM.	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CDlaser respectively when the laser is switched on.	Cancelled automatically 5 seconds later.
DVD laser drive current measuremen t	In STOP mode, press PAUSE and OPEN buttons on player, and DISPLAY button on the remote control unit.	DVD laser drive current measurement ・DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, DVD laser emissionis kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.	Cancelled automatically 5 seconds later.
ADSC internal RAM data check	In ** mode, press PAUSE and OPEN buttons on the player, and RETURN button on the remote control unit.	ADSC internal RAM data check ・ADSC internal RAM data is read out and displayed. Change the address with CLEAR key operation to show the data for 11 addresses.	 The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFah is 6901h.	Press STOP or OPEN button.
Servo process display	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “7” button on the remote control unit.	Servo process displayed. The servo process from STOP to ACCESS is displayed.	-	Turn off secondary power.
CD laser drive current measuremen t	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and DISPLAY button on the remote control unit.	CD laser drive current measurement. CD laser drive current measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, CD laser emission is kept on. It is turnedoff when POWER key is switched off. (It is also turned off when the primary power is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.	-

Item	Player mode and button combination	Function	Display	Cancellation method
Version display	In STOP mode, press PAUSE and OPEN buttons on the player, and “7” button on the remote control unit.	Version display.		Cancelled automatically 5 seconds later.
Lighting of display tube	In ** mode, press PAUSE and OPEN buttons on the player, and “9” button on the remote control unit.	Lighting of display tube	-	Press STOP or OPEN button.
Dealer’s lock	In STOP mode, press STOP button on the player, and POWER button on the remote control unit.	Dealer’s lock. The lock is switched ON or OFF. When dealer’s lock is ON, it prohibits switching off of the secondary power and tray opening. When the lock is switched, its ON/OFF statusis stored in EEPROM.	・“LOCKED” sign appears when dealer’s lock is swiched on, or when secondary power key or tray opening key is pressed while the lock is on. ・“UNLOCKED” sign appears when dealer’s lock is switched off.	Repeat the same operation.
Initialization	In STOP mode, press PAUSE, BWD-SKIP and OPEN buttons on the player for 3 seconds or longer.	Initialization. User settings are cancelled and player is initailized to factory setting.	“INITIALIZED”	
Region display	In STOP mode, press PAUSE and OPEN buttons on the player, and “6” button on the remote control unit.	Region display		Cancelled automatically 5 seconds later.

Item	Player mode and button combination	Function	Display	Cancellation method
Timer 1 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “5” button on the remote control unit.	Timer 1 check. Laser operation timer. Operation time is measured separately for DVD laser and CD laser.	T1_1234_5678. Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. “0000” will follow “9999”.(You may have to press the “FL select” button on the remote control to view the remaining text when the text is too long to display on the FL at one time).	Cancelled automatically 5 seconds later.
Timer 1 reset	While displaying Timer 1 data, press STOP and FWD-SKIP buttons on the player, and “5” button on the remote control unit.	Timer 1 reset. Laser operation timer. Operation time of both DVD laser and CD laser is reset all at once.	T1_0000_0000. (You may have to press the “FL select” button on the remote control to view the remaining text when the text is too long to display on the FL at one time).	Cancelled automatically 5 seconds later.
Timer 2 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “6” button on the remote control unit.	Timer 2 check. Spindle motor operation timer.	T2_1234. Time is shown in 4 digits of decimal notation in a unit of 10 hours. “0000” will follow “9999”.	Cancelled automatically 5 seconds later.
Timer 2 reset	While displaying Timer 2 data, press STOP and FWD-SKIP buttons on the player and “6” button on the remote control unit.	Timer 2 reset. Spindle motor operation timer.	T2_0000	Cancelled automatically 5 seconds later.

8.10. Servo Process Flow

Specification of the servo process display in the starting flow



(Restrictions)

All processes that are under operation cannot be displayed due to the limit of the processing time.

Starting flow	Range of the servo process numbers	Processing items	
		Number	Contents of each process
Start			
Initial setting Tray control	00	00	Each initial setting
TRV initial movement	01	01	TRV initial movement
Disc detection	02~08	02	Initial setting in FE system
		05	Detecting LD ON HALF
		08	Detecting CD LD ON
Disc type distinction	02~08	02	Initial setting in FE system
Focus servo	10~13	12	Focus ON
		13	FBAL adjustment
Tracking servo	14~15	15	Tracking ON
Gain learning	17	17	Gain adjustment in ADSC focus system
ID read	18~1A	19	DBAL/equalizer adjustment
		1A	ID read

8.11. Servo Process Display Mode

In starting operation of the player, a number is alloted to each servo process so that the operation of each step can be seen. The relation between the process and the displayed number are as follows:

Number allotment to the servo process

Process classification	Each processing item	Description	Process number
Initial start process	Initial start	The process starts after the tray is loaded. (The state is changed to “READY” or “PREPARE”.)	0~40
	Secondary learning	Servos for the DVD-DL 1st layer and the CD-DA double speed are learned in this step.	50~7F
Restart process	Restart	When a user operates in the “READY” state, each servo is turned on.	80~9F
Seek process	Seek	The optical pickup is moved to the disc destination in this process.	A0~BF
Repair process	Recover		
	(Error check)	An error is searched in the PLAY/SEEK state.	C1~C3
	(Attention)	An error is recovered following the attention error interrupt from the S-ODC.	C4~C6
	(Q code read)	If any Q code in improperly read, reset and retry.	C7~C9
Stop process	Stop	A servo is controlled in response to the user’s operation to stop the disc completely.	F0~FF

8.12. ADSC Internal RAM Data Display

The servo learning value in the RAM data inside the servo processor ADSC is displayed.

The value is useful for the servo operation/disc quality judge including the OPU.

The concrete contents are shown below:

Address	Contents of display
4B4	Focus gain learning value for DVD-S, DVD-D(L0), CD, and VCD
4BC	Focus gain learning value for DVD-D(L1)
4B6	Focus balance learning value for DVD-S, DVD-D(L0), CD, and VCD
4BE	Focus balance learning value for DVD-D(L1)
4B5	Tracking gain value for DVD-S, DVD-D(L0), CD, and VCD
4BD	Tracking gain value for DVD-D(L1)
TB0	Tracking balance value for DVD-S, DVD-D(L0), CD, VCD
TB1	Tracking balance value for DVD-D(L1)
DBD	DSL offset learning value for DVD-S and DVD-D
DBC	DSL offset learning value for CD and VCD
FC0	Equalizer FC value for DVD-S, DVD-D(L0), CD, and VCD
BT0	Equalizer BOOST value for DVD-S, DVD-D(L0), CD and VCD
FC1	Equalizer FC value for DVD-D(L1)
BT1	Equalizer BOOST value for DVD-D(L1)

8.13. Sales demostration lock function

This function prevents discs from being lost when the unit is used for sales demostrations by disabling the disc eject function.

“LOCKED” is displayed on the unit, and ordinary operation is disabled.

8.13.1. Setting

The sales demostration lock is set by simultaneously pressing STOP button on the player and POWER button on the remote control unit.

8.13.2. Cancellation

The lock can be cancelled by the same procedure as used in setting. (“UNLOCKED” is displayed on cancellation. Disconnecting the power cable from power outlet does not cancel the lock.)

8.14. Service Precautions

8.14.1. Recovery after the DVD player is repaired

When an FROM or an EEPROM in and on the module P.C.B. has replaced, carry out the recovery disc processing to optimize the drive.

Playback the disc above to process the recovery automatically.

Recovery disc (Product number: RFKZD5TR006)

Notes:

This unit requiress no initialization process carried out after the traditional DVD players were repaired.

When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of “Initialization” in 8.6 is carried out. Write down the contents of the setting before recoveryprocessing, and reset the player.

8.14.2. Firmware version-up of the DVD player

The firmware of the DVD player may be renewed to improved the quality including operationability and playerbility to the substandard disc processing to optimize the drive.

The version-up disc has also a recovery function so that you don’t need use the recovery disc again.

Note:

If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.

In such case, replace the FROM and carry out the version-up again.

The product number of the version-up disc will be noticed when it is supplied.

8.15. Handling After Completing Repairs

Use the following procedure after completing repairs.

8.15.1. Method

Confirm that the power is turned on:

1. Press the “OPEN/CLOSE” button to close the tray.
2. Press the “POWER” button to turn off the power.
3. Disconnect the power plug from the outlet.

8.15.2. Precautions

Do not disconnect the power plug from the outlet with the tray still open, then close the tray manually.

9 Electrical Adjustment

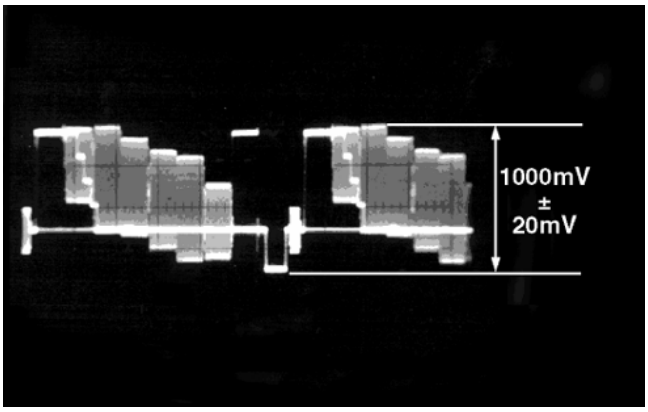
9.1. Video Output (Brightness Signal) adjustment

Carry out this adjustment after board replacement.

Measurement Point	Adjustment Mode	Test Disc
Video output jac	Colour bar 75%Playback (Title 46) : DVDT-S15Playback (Title 12): DVDT-S15	DVDT- S15orDVDT-S01
Required equirmentScrewdriver, oscilloscope	Adjustment	
	1000mVp-p±20mV	

Purpose: To ensure compatibility of video signal output. 75Ω.

1. Connect the oscilloscope to the video output jacks and set



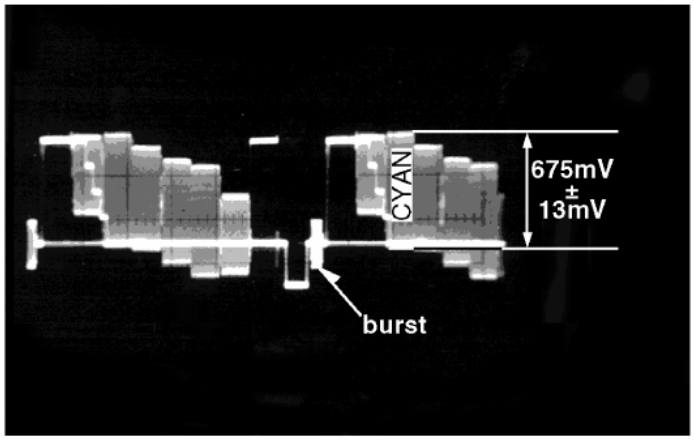
9.2. Video Output (Colour Signal) adjustment

Carry out this adjustment after board replacement.

Measurement Point	Adjustment Mode	Test Disc
Video output jac	Colour bar 75%Playback (Title 46) : DVDT-S15Playback (Title 12): DVDT-S15	DVDT- S15orDVDT-S01
Required equirmentScrewdriver, oscilloscope200mV/div, 10µsec/div	Adjustment	
	675mVp-p±13mV	

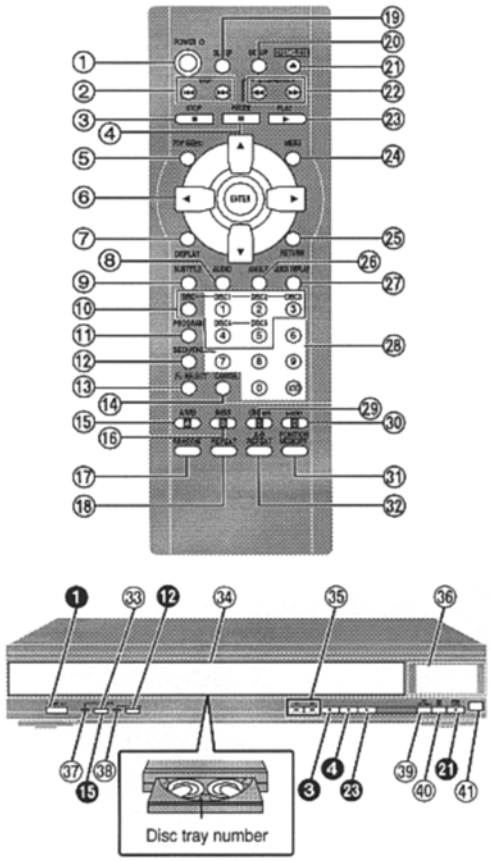
Purpose: To ensure compatibility of video signal output. 75Ω.

1. Connect the oscilloscope to the video output jacks and set



10 Operation Procedure

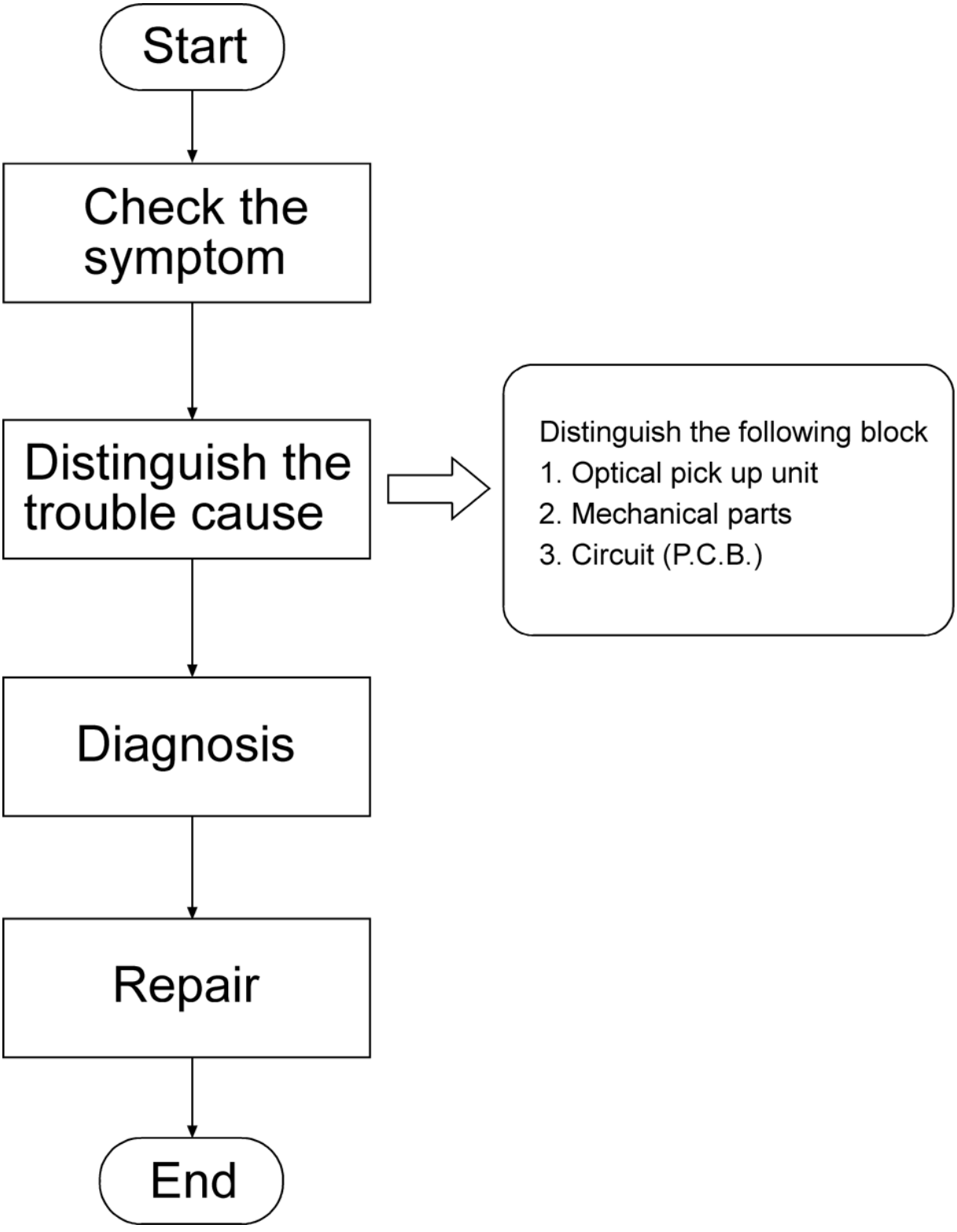
Control reference guide



① Standby/on switch (POWER ⏻)
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of power.
② Skip buttons (⏮, ⏭ SKIP).
③ Stop button (■ STOP)
④ Pause button (❚❚ PAUSE)
⑤ Top menu button (TOP MENU)
⑥ Cursor buttons (▲, ▼, ◄, ►)/Enter button (ENTER)
⑦ Display button (DISPLAY)
⑧ Audio button (AUDIO)
⑨ Subtitle button (SUBTITLE)
⑩ Disc select button (DISC), Disc buttons (DISC1 – DISC5)
⑪ Program button (PROGRAM)
⑫ Sequential button (SEQUENTIAL)
⑬ FL select button (FL SELECT)
⑭ Cancel button (CANCEL)
⑮ Bass plus button (B BASS)
⑯ Random play button (RANDOM)
⑰ Repeat button (REPEAT)
⑱ Sleep button (SLEEP)
⑲ Setup button (SETUP)
⑳ Drawer open/close button (⏏ OPEN/CLOSE)
㉑ Slow/Search buttons (◄◄, ►► SLOW/SEARCH)
㉒ Play button (► PLAY)
㉓ Menu button (MENU)
㉔ Return button (RETURN)
㉕ Angle button (ANGLE)
㉖ Quick replay button (QUICK REPLAY)
㉗ Numbered buttons (1–9, 0, ≧10)
㉘ Cinema button (C CINEMA)
㉙ Dialogue Enhancer button (D D.ENH)
㉚ Position memory button (POSITION MEMORY)
㉛ A-B repeat button (A-B REPEAT)
㉜ Progressive out button (PROGRESSIVE OUT)
㉝ Drawer
㉞ Skip, Search buttons (⏮ ⏭, ◄◄ ►►)
㉟ Display
㊱ Progressive out indicator
㊲ CD sequential indicator
㊳ Disc exchange button (DISC EXCHANGE)
㊴ Disc skip button (DISC SKIP)
㊵ Remote control signal sensor

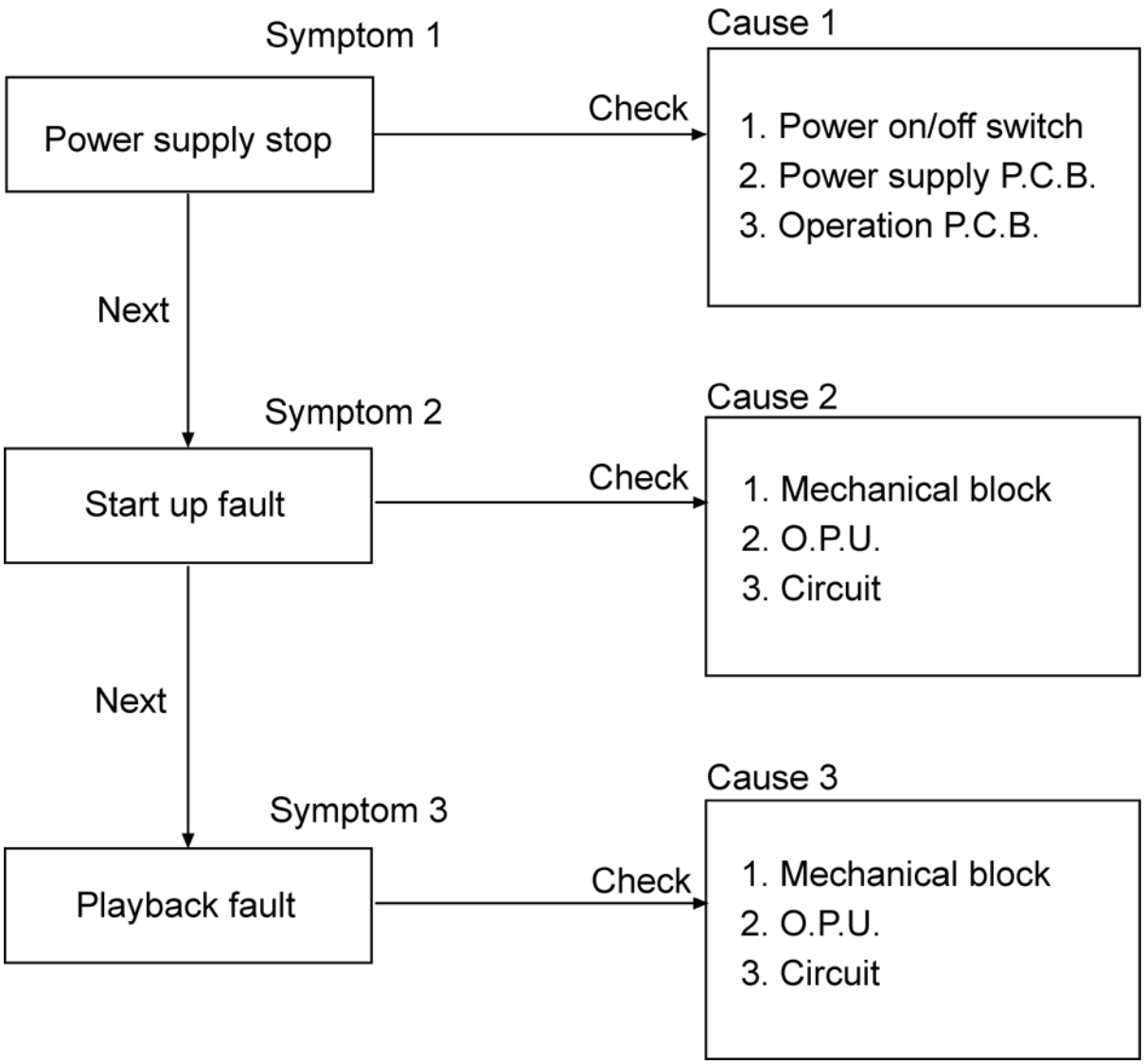
Buttons such as ❶ function the same as the controls on the remote control.

11 Procedure for reparing the set



11.1. Distinguish the trouble cause

- Check flow



How to distinguish the trouble

1. View mechanical part if visual damage occurred.
   Confirm the movement of mechanical parts assembly (tray ass'y, loading mechanism ass'y, etc.).
2. Diagnose if Optical Pickup Unit is faulty (refer to diagnosis of Optical Pickup Unit).
3. If mechanism and OPU are OK, it is P.C.B.

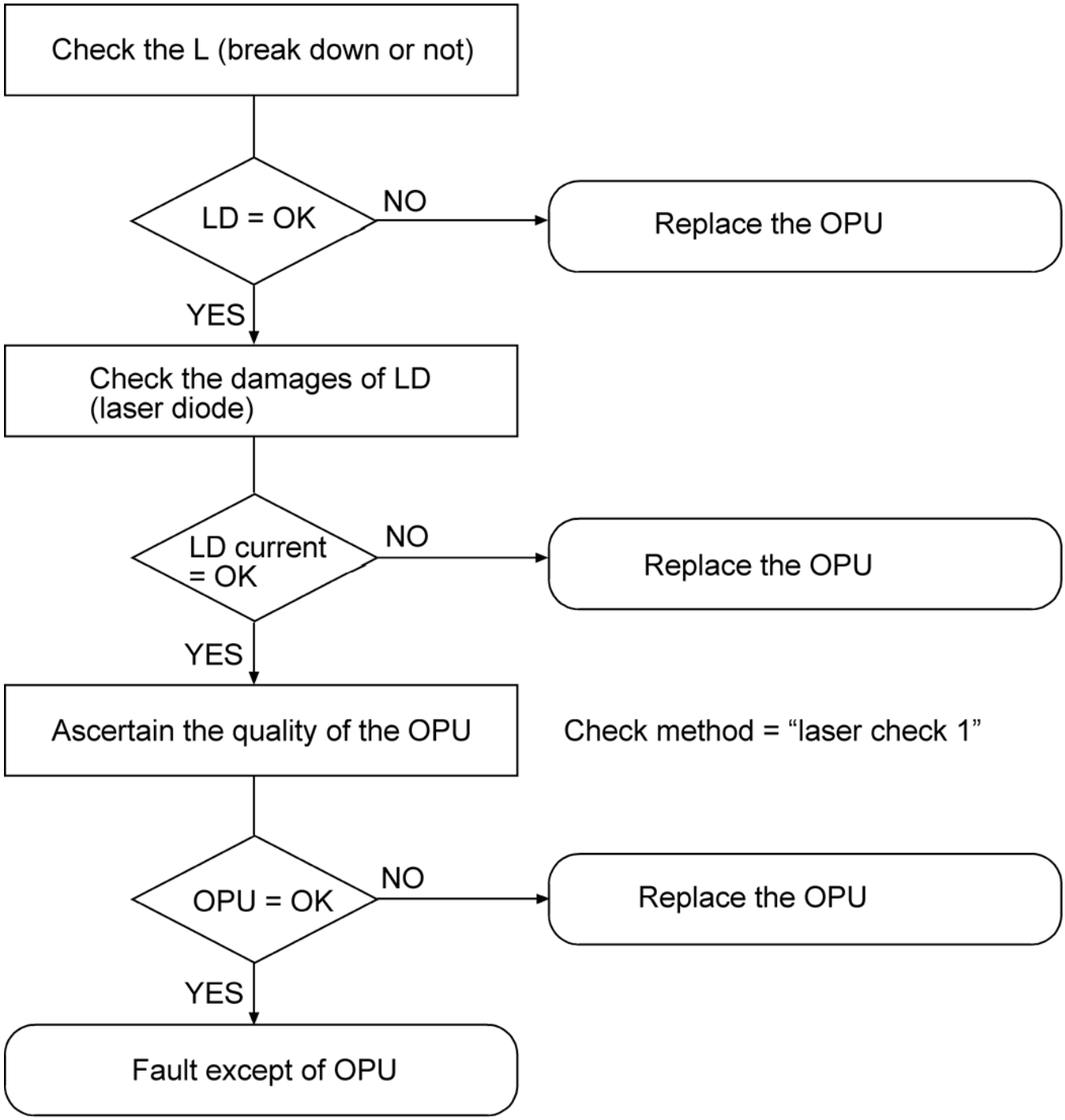
Cause 1	Possible fault
1. Power ON/OFF switch	Power switch, connector cable
2. Power supply P.C.B.	D1011, T1021, Q1051 etc.
3. Operational P.C.B.	CPU (IC6001), X6001, IC6002 etc.

Cause 2	Possible fault
1. Mechanical block	Tray and loading mechanical block, traverse
2. O.P.U.	Refer to the diagnosis of OPU
3. Circuit	LD drive, servo (Traverse, Focus, Tracking) Disc sensor Signal processing (FEP, ADSC etc.)

Cause 3	Possible fault
1. Mechanical block	Traverse block (Tilt adjustment)
2. O.P.U.	Refer to the diagnosis of OPU
3. Circuit	Servo (Focus, tracking) Signal processing (FEP, ODC, AVDEC, A-DAC etc.)

11.2. Diagnosis of Optical Pick-up Unit

Diagnosis Method
Diagnose the OPU by the following procedure



Note : When LD does not emit light after replacing the OPU, check the LD drive circuit in the module P.C.B.

How to distinguish Laser destruction/damage

Confirmation 1

Remove cover of mechanism block so that you will see the lens of optical pickup.

Confirm emission of laser at the moment when power switch is turned on.

If there is no laser emission, laser diode is faulty.

Confirmation 2

While holding “Pause” and “Open/Close” button, press “Display” button on the remote controller. Unit display laser current on FL.

From the reading of display, you can judge if laser diode is damaged or not.

Reading on the right side should be less than 70. If reading is more than 70, laser is damaged.

How to confirm if Optical Pickup is OK

Confirmation 1

1. Confirmation of jitter value with test disc. (Refer below for how to check jitter)
2. Lens cleaning.
3. Reconfirm jitter value.
4. Perform tile adjustment. (Refer to tilt adjustment)
5. Reconfirm jitter value. (To confirm jitter value, while pressing “Pause” and “Open/Close” button, press numeric “5” on remote controller.)

   Unit display jitter value on FL.

Confirmation 2

If servo is very unstable due to optical error and you cannot confirm jitter value, clean the lens and check appearance of pick up unit (cutting coil of actuator, etc), then check circuitry.

12 Disassembly and Main Component Replacement Procedures

“ATTENTION SERVICER”

Some chassis components may have sharp edges.

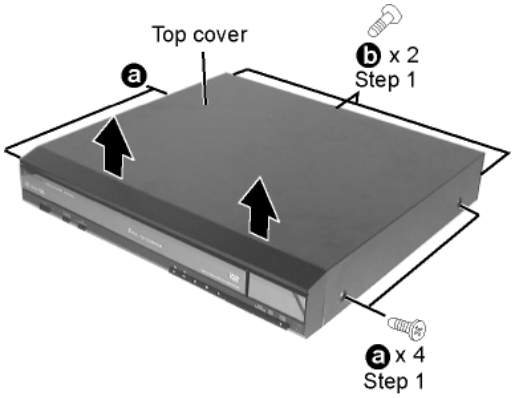
Be careful when disassembling and servicing.

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For assembly after operation checks or replacement, reverse the respective procedures.**

   Special reassembly procedures are described only when required.
3. **Select items from the following index when checks or replacement are required.**

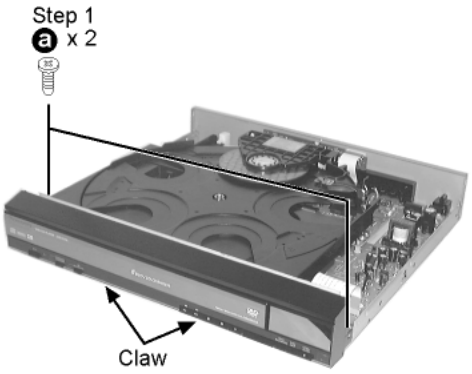
12.1. Disassembling the Top Cover

1. Remove the 4 screws each side and 3 screws at rear panel.

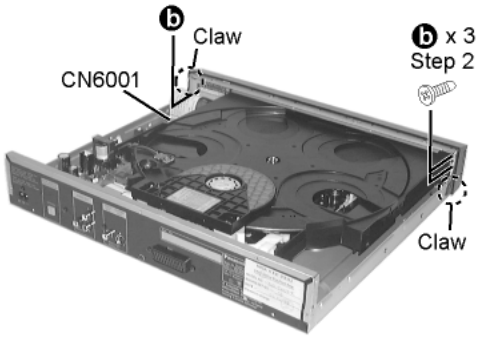


12.2. Disassembling the Front Panel

1. Remove the 2 screws.



2. Release 2 claws below.

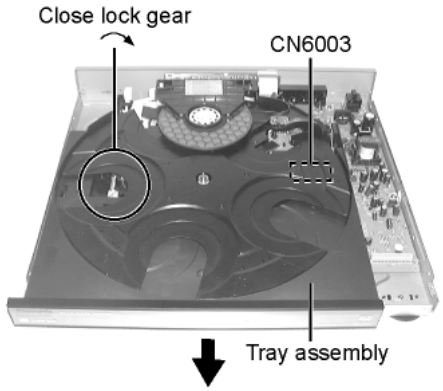


3. Remove the 3 screws behind the rear panel and disconnect CN6001.

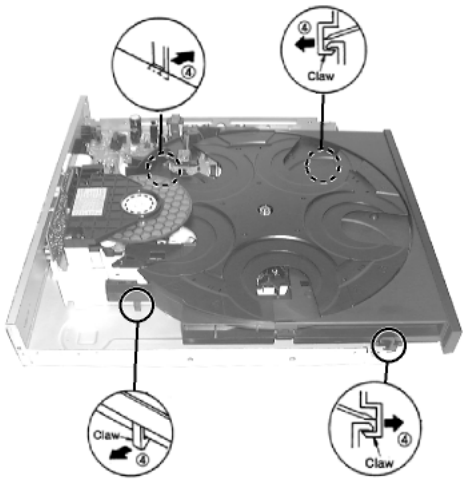
4. Release 2 claws each side.

12.3. Disassembling the Tray Assembly

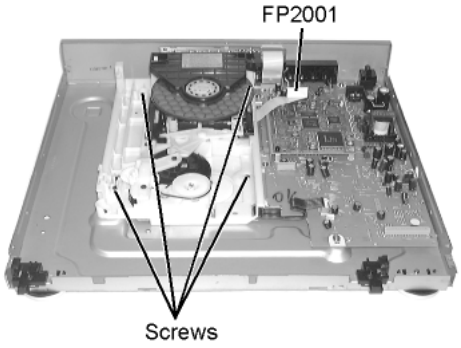
1. Keep the close lock gear pressed in clockwise, move the tray assembly in the direction of the arrow..



2. Release connector CN6002.



3. Push and release the 4 claws in the direction of arrow 3, and then remove the tray assembly in the direction of arrow 4.

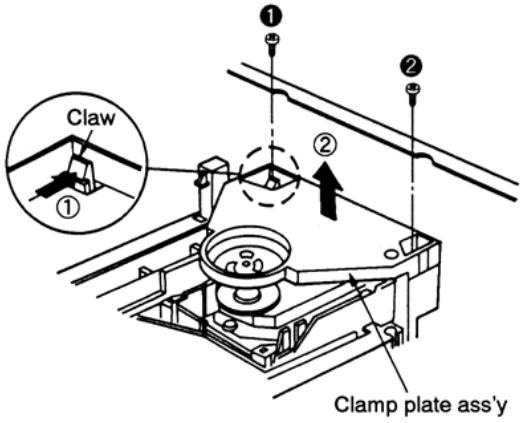


4. Pull out the FFC CN6003 and FP2001.

12.4. Disassembling the Clamp Plate Assembly

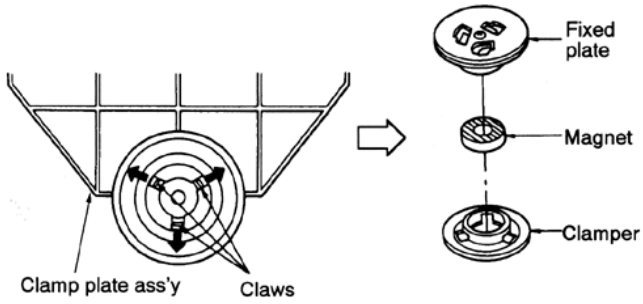
1. Remove 2 screws.

2. Push the claw in the direction of arrow 1, and then remove the clamp plate ass'y in the direction of arrow 2.



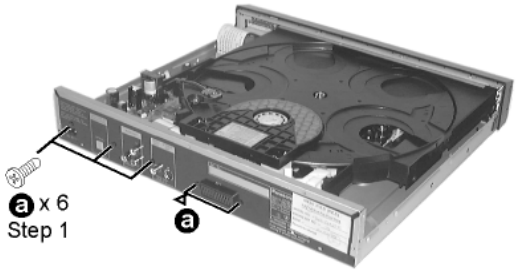
12.5. Disassembling the Fixed Plate, Magnet and Clamper

1. Release the 3 claws in the direction of arrow.

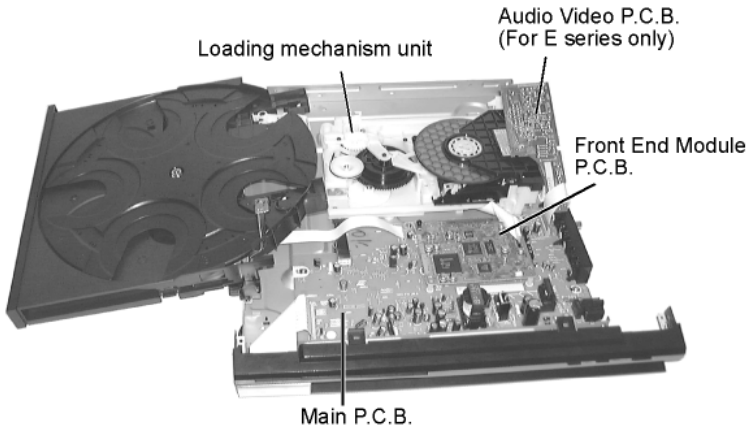


12.6. Disassembling the Rear Panel

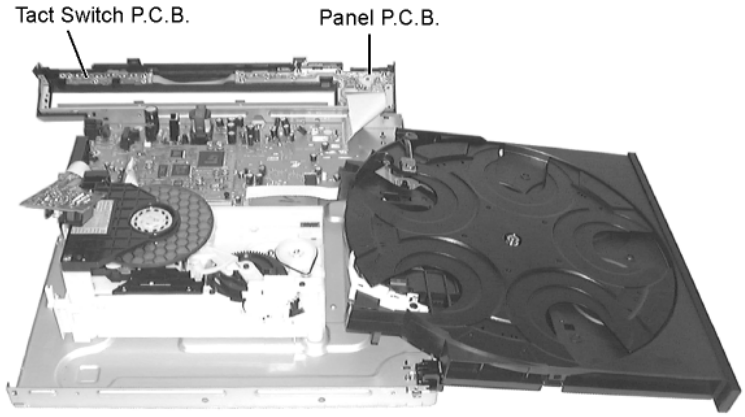
1. Remove 6 screws at the rear panel.

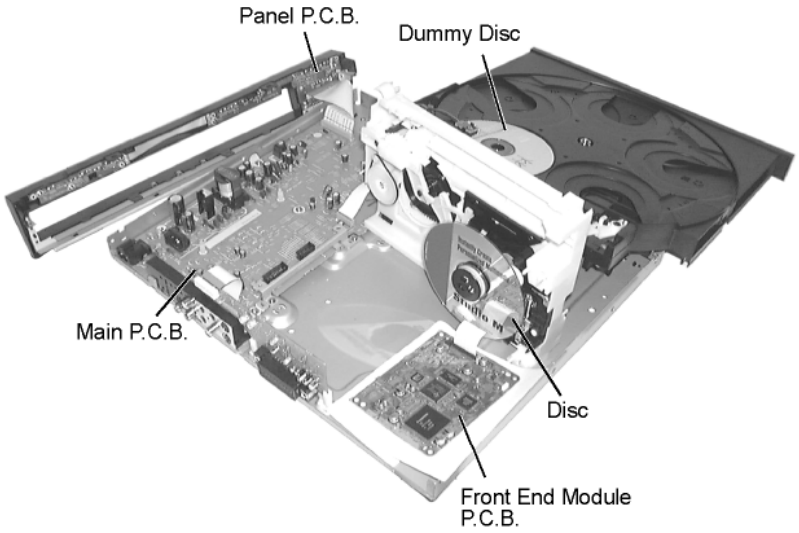


12.7. Checking for major P.C.B..



Service position for checking the Front End Module P.C.B.

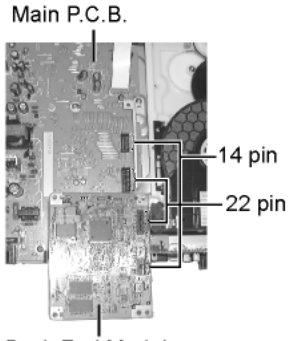




1. Set the dummy disc on the tray before playback the disc.

First, playback the disc with Loading Mechanism block in normal position, then stand up the Loading Mechanism block vertically.

Service position for Checking the foil side of Back end Module P.C.B.



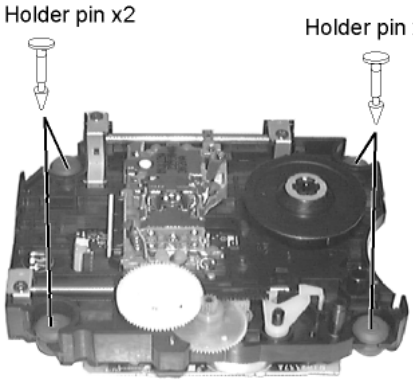
Extension Cable
(Main P.C.B. to Back End Module P.C.B.)
JGS0116 - 22 pin
JGS0098 - 14 pin

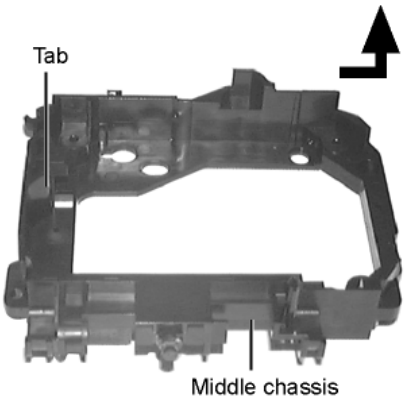
12.8. Disassembling the Middle Chassis

Step 1 Remove the holder pins.

Step 2 Remove the tab.

Step 3 It lifts while pulling it in the direction of the arrow.



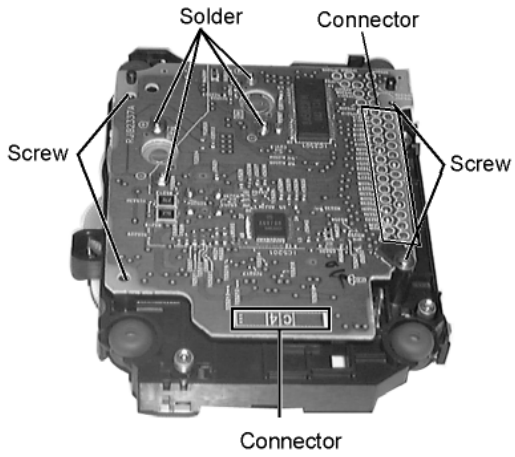


12.9. Terminal P.C.B.

Step 1 Unscrew the screw.

Step 2 Remove the solders.

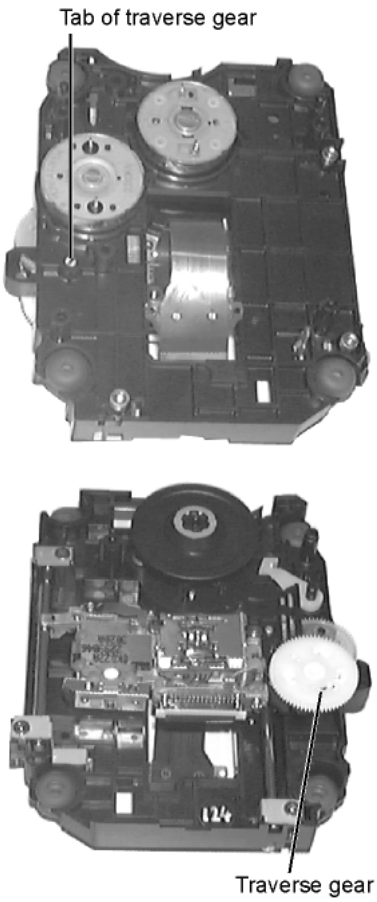
Step 3 Remove the connector.



12.10. Traverse Gear

Step 1 Disengage the tabs from the traverse gear.

Step 2 Remove the traverse gear.

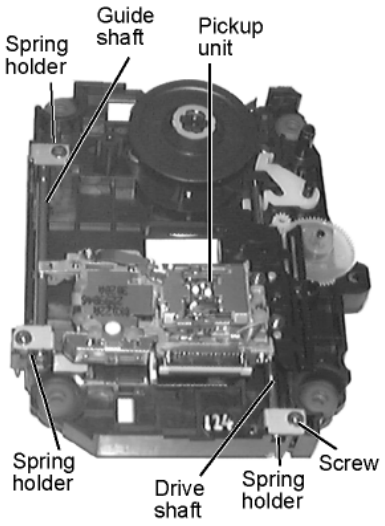


12.11. Optical Pickup Unit

Step 1 Unscrew the screws.

Step 2 Remove the spring holders and the springs.

Step 3 Pull out the drive shaft and guide shaft.



12.11.1. Precautions in optical pickup replacement

The optical pickup can be damaged by static electricity from your body. Be sure to take static electricity countermeasures when working around the optical pickup. (Refer to the related page in this Manual about the countermeasures.)

1. Do not touch laser diode, actuator and their peripheries.
2. Do not use tester to check laser diode. (Laser diode can be damaged easily.)
3. The use of soldering iron with anti-static feature is recommended when providing short-circuit to laser diode or when removing it.
4. Solder the land on flexible cable of optical pickup unit.

Caution

- When using the soldering iron without anti-static feature, short circuit the flexible cable terminal with a clip before short-circuiting the land.
- After intended repair is finished, remove the solder for short-circuit of laser diode in a correct way following the procedure described in this Manual.

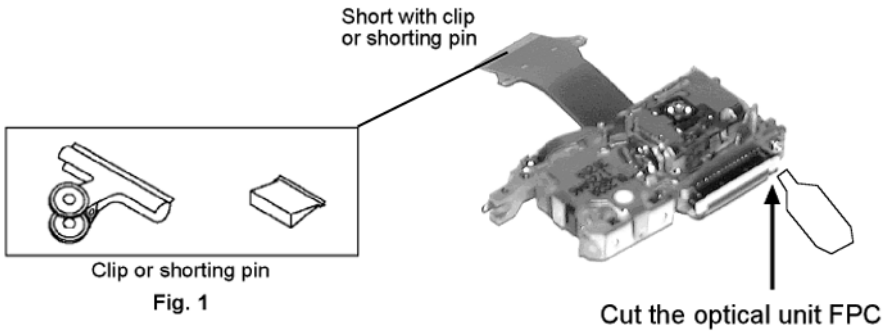
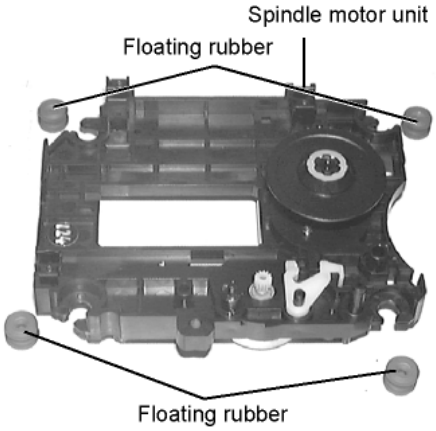


Fig. 1

12.12. Disassembling the Spindle Motor Unit

Step 1 Remove the floating rubbers.



13 Adjustment Procedures

13.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S01
	Hex wrench	Available on sale route.
Inspection	Extension cable (module P.C.B. to mother P.C.B.)	JGS0116
	Extension cable (module P.C.B. to mother P.C.B.)	JGS0098
Others	Screw lock	RZZ0L01
	Frease (1)	RFKXGAK152
	Grease (2)	RFKXGP641
	Oil (1)	RFKXGA1280
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD5TR006

13.2. Important points in adjustment

13.2.1. Important points in optical adjustment

・Before starting optical adjustment, be sure to take anti-static measures.

・Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit.
2. Spindle motor unit.
3. Optical pickup peripheral parts (such as rail).

Notes

Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, make adjustment if there is a noticeable degradation in picture quality. Optical adjustments cannot be made inside the optical pickup. Adjustment is generallyunnecessary after replacing in traverse unit.

13.2.2. Important points in electrical adjustment

・Follow the adjustment procedures described in this Manual.

13.3. Storing and Handling Test Discs

・Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc,. after use.
2. Handle disc carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store disc in a cool place where they are not exposed to direct sunlight or air from air conditioners.
3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustment.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

13.4. Optical adjustment

13.4.1. Optical pickup tilt adjustment

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screwTilt adjustment screw	T01 (inner periphery) playT43 (outer periphery) play	DVDR-S15 or DVDT-S01
Measuring equipment		Adjustment value	
None (Main unit display for servicing is used.)		Adjustment to the minimum jitter value.	

13.4.1.1. Adjustment procedure

1. Whie pressing PAUSE and OPEN/CLOSE buttons on the main unit, press “5” on the remote control unit.
2. Confirm that “J_xxx_yyy_zz” is shown on the front display.

   For your information:

   “yyy” and “zz” shown to the right have nothing to do with the jitter value. “yyy” is the error counter, while “zz” is the focus drive value.

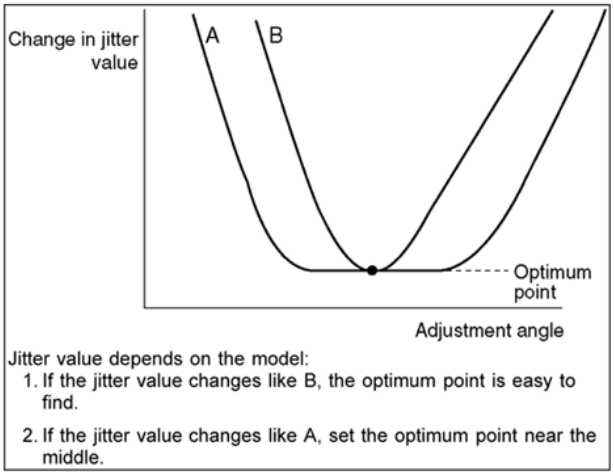
   Note:

   Jitter value appears on the front display.
3. Play test disc T01 (inner periphery).
4. Adjust tangential adjustment screw so that the jitter value is minimized.

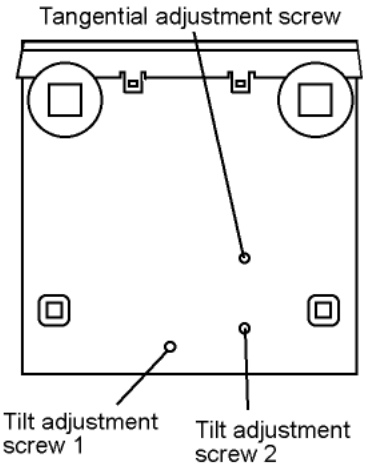
5. Play test disc T43 (outer periphery).
6. Adjust tilt adjustment screw 1 so that the jitter value is minimized.
7. Play test disc T43 (outer periphery).
8. Adjust tilt adjustment screw 2 so that the jitter value is minimized.
9. Repeat adjusting tilt adjustment screw 1 and 2 alternately unitl the jitter value is minimized.

13.4.1.2. Important points

1. Make tangential adjustment first, and then make tilt adjustment.
2. Repeat adjusting two or three times to find the optimum point.
3. Finish the procedure with tilt adjustment.



Jitter value depends on the model:
1. If the jitter value changes like B, the optimum point is easy to find.
2. If the jitter value changes like A, set the optimum point near the middle.

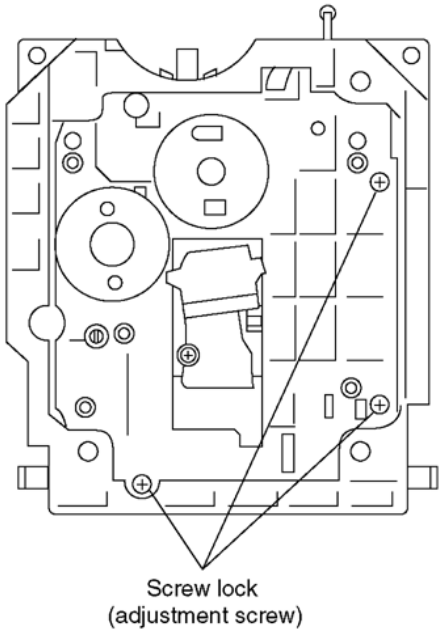


13.4.1.3. Check after adjustment

Play test disc or any other disc to make sure there is no picture degradation in the inner, middle and outer peripheries, and no audio skipping. After adjustment is finished, lock each adjustment screw in position using screw lock.

13.4.1.4. Procedure for screw lock

1. After adjustment, remove top cover, tray, clamper base and traverse unit in this sequence.
2. Lay the traverse unit upside down, and fix adjustment screw with screw lock.
3. After fixing, reassemble traverse unit, clamper base, tray and top cover.

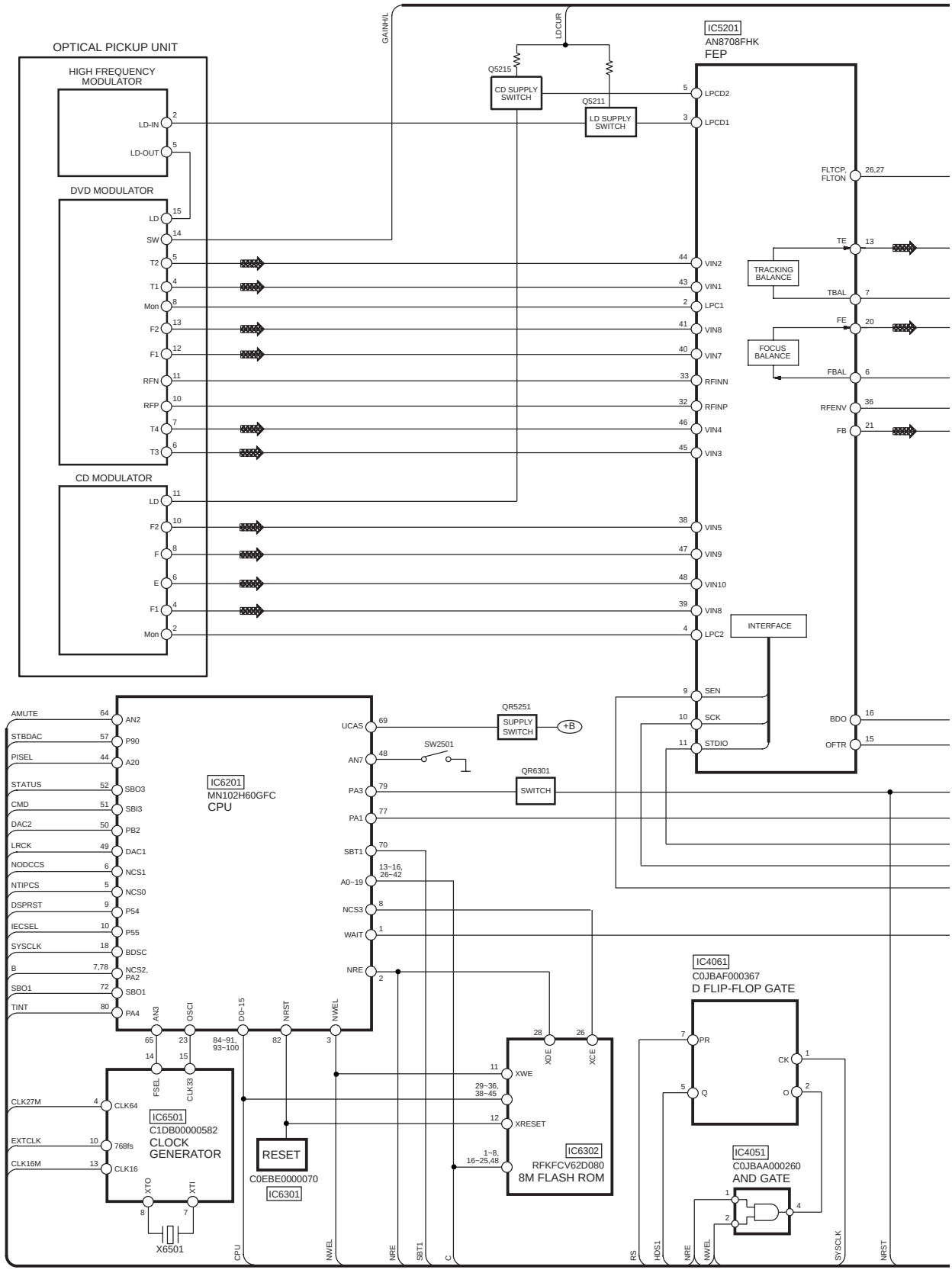


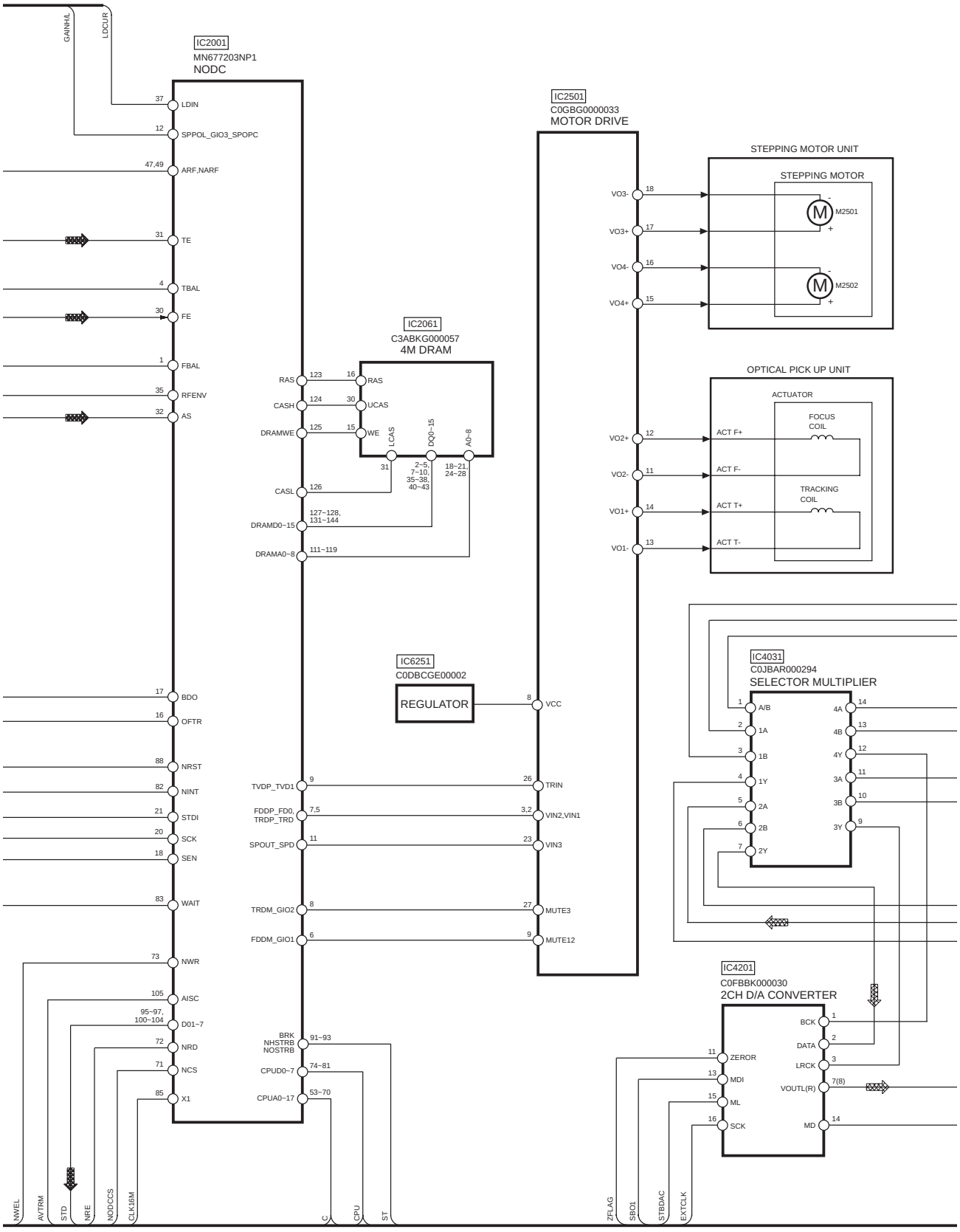
14 Terminal Function of IC ’ s

14.1. IC6001 (MN101C35DCN) System Microprocessor

Pin No.	Mark	I/O	Function
1	CMD	O	Serial output
2	STAT	I	Serial input
3	DSPCLK	I	Serial clock
4	P03	O	Not used
5	P04	O	Not used
6	P05	O	Not used
7	P06	O	Port
8	VDD	I	5V
9	OSC2	O	Clock
10	OSC1	I	Clock
11	VSS	I	GND
12	XI	I	Not used
13	XO	O	Not used
14	MMOD	I	Memory mode L
15	VREF-	I	A/D reference L
16	KEYIN0	I	A/D key input
17	KEYIN1	I	A/D key input
18	KEYIN2	I	A/D key input
19	PA3	I	Port
20	PA4	I	Port
21	PA5	I	Port
22	PA6	I	Port
23	PA7	I	Port
24	VREF+	I	A/D reference H
25	P07	O	Mecha control
26	/RST	I	Reset
27	O-TURN	O	Mecha control
28	O-DIR	O	Mecha control
29	O-PWM	O	Mecha control
30	0-P_OFF	O	Power OFF
31	POWER-MUTE	O	Power mute
32	WIDE1	O	
33	REMOCON	I	Remote controller input
34	P21	I	Disc_Sens
35	P22	I	Tray open
36	I POSITI	I	Mecha control
37	I SPEED	I	Mecha control
38	P25	I	Not used
39	P30	O	Not used
40	P31	O	Mute
41	P32	O	0.1 CH
42	O STBY-LED	O	LED
43	P51	O	LED
44	P52	O	LED
45	P53	O	LED
46	P54	O	LED
47-63	DGT17-DGT1	O	FL-DGT
64-99	SEG7-SEG42	O	FL-SEG
100	VPP	I	FL-23V

15 Block Diagram




GAINHL
LDCUR
IC2001
MN677203NP1
NODC
37 LDIN
12 SPPOL_GIO3_SPOPC
47,49 ARF,NARF
31 TE
4 TBAL
30 FE
1 FBAL
35 RFENV
32 AS
17 BDO
16 OFTR
88 NRST
82 NINT
21 STDI
20 SCK
18 SEN
83 WAIT
73 NWR
105 AISC
95~97, 100~104 D01~7
72 NRD
71 NCS
85 X1
IC2061
C3ABKG000057
4M DRAM
RAS 123 16 RAS
CASH 124 30 UCAS
DRAMWE 125 15 WE
LCAS 31
DQ0~15 2~5, 7~10, 35~38, 40~43
A0~8 18~21, 24~28
CASL 126
DRAMD0~15 127~128, 131~144
DRAMA0~8 111~119
IC6251
C0DBCGE00002
REGULATOR
8 VCC
TVDP_TVD1 9 26 TRIN
FDDP_FD0, TRDP_TRD 7,5 3,2 VIN2,VIN1
SPOUT_SPD 11 23 VIN3
TRDM_GIO2 8 27 MUTE3
FDDM_GIO1 6 9 MUTE12
BRK NHSTRB NOSTRB 91~93
CPUD0~7 74~81
CPUA0~17 53~70
IC2501
C0GBG0000033
MOTOR DRIVE
VO3- 18
VO3+ 17
VO4- 16
VO4+ 15
STEPPING MOTOR UNIT
STEPPING MOTOR
M2501
M2502
OPTICAL PICK UP UNIT
ACTUATOR
FOCUS COIL
TRACKING COIL
VO2+ 12 ACT F+
VO2- 11 ACT F-
VO1+ 14 ACT T+
VO1- 13 ACT T-
IC4031
C0JBAR000294
SELECTOR MULTIPLIER
1 A/B
2 1A
3 1B
4 1Y
5 2A
6 2B
7 2Y
4A 14
4B 13
4Y 12
3A 11
3B 10
3Y 9
IC4201
C0FBBK000030
2CH D/A CONVERTER
BCK 1
DATA 2
LRCK 3
VOUTL(R) 7(8)
MD 14
11 ZEROR
13 MDI
15 ML
16 SCK
NWEL
AVTRM
STD
NRE
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CLK16M
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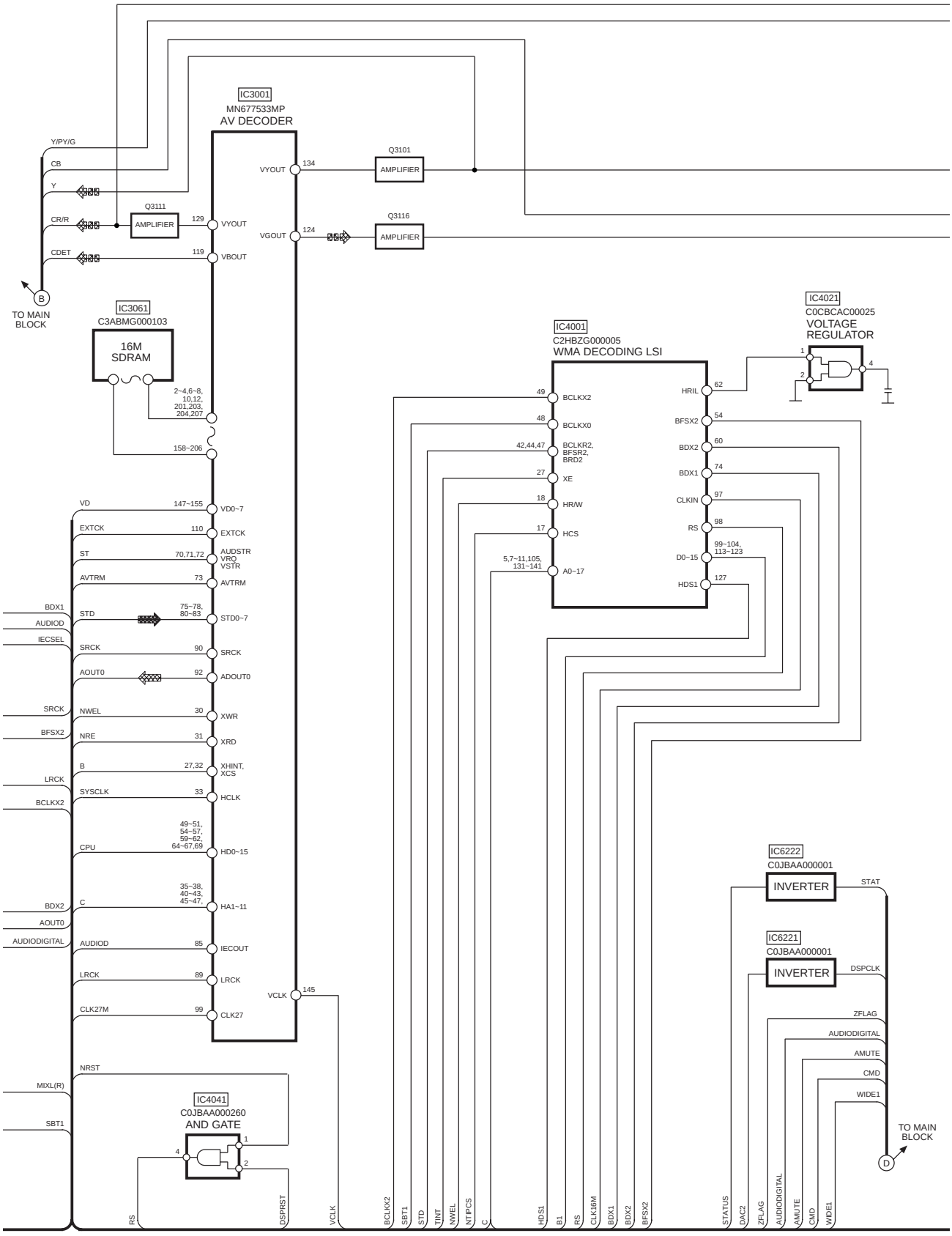
CPU
ST
ZFLAG
SBO1
STBDAC
EXTCLK


IC3001
MN677533MP
AV DECODER
Y/PY/G
CB
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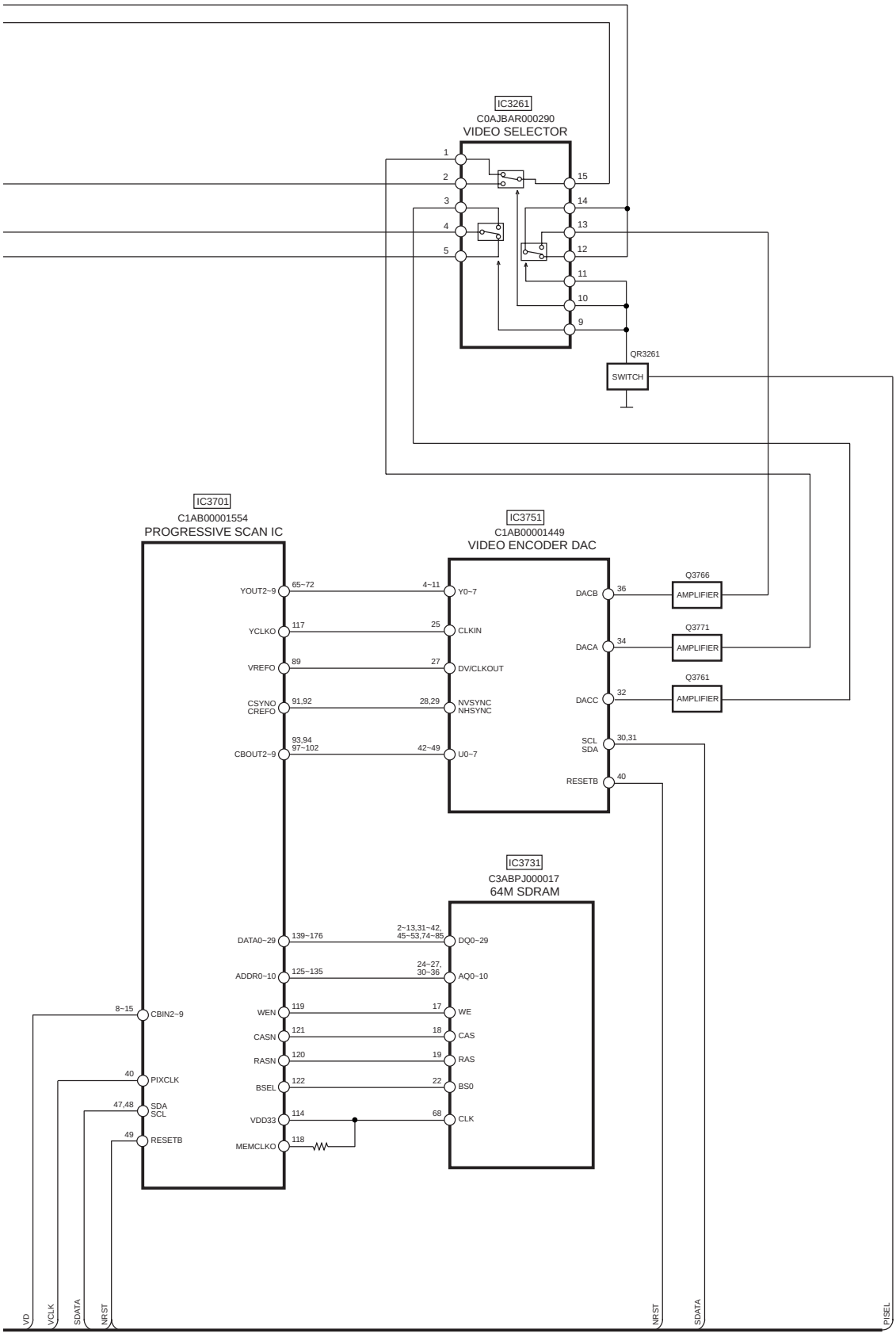
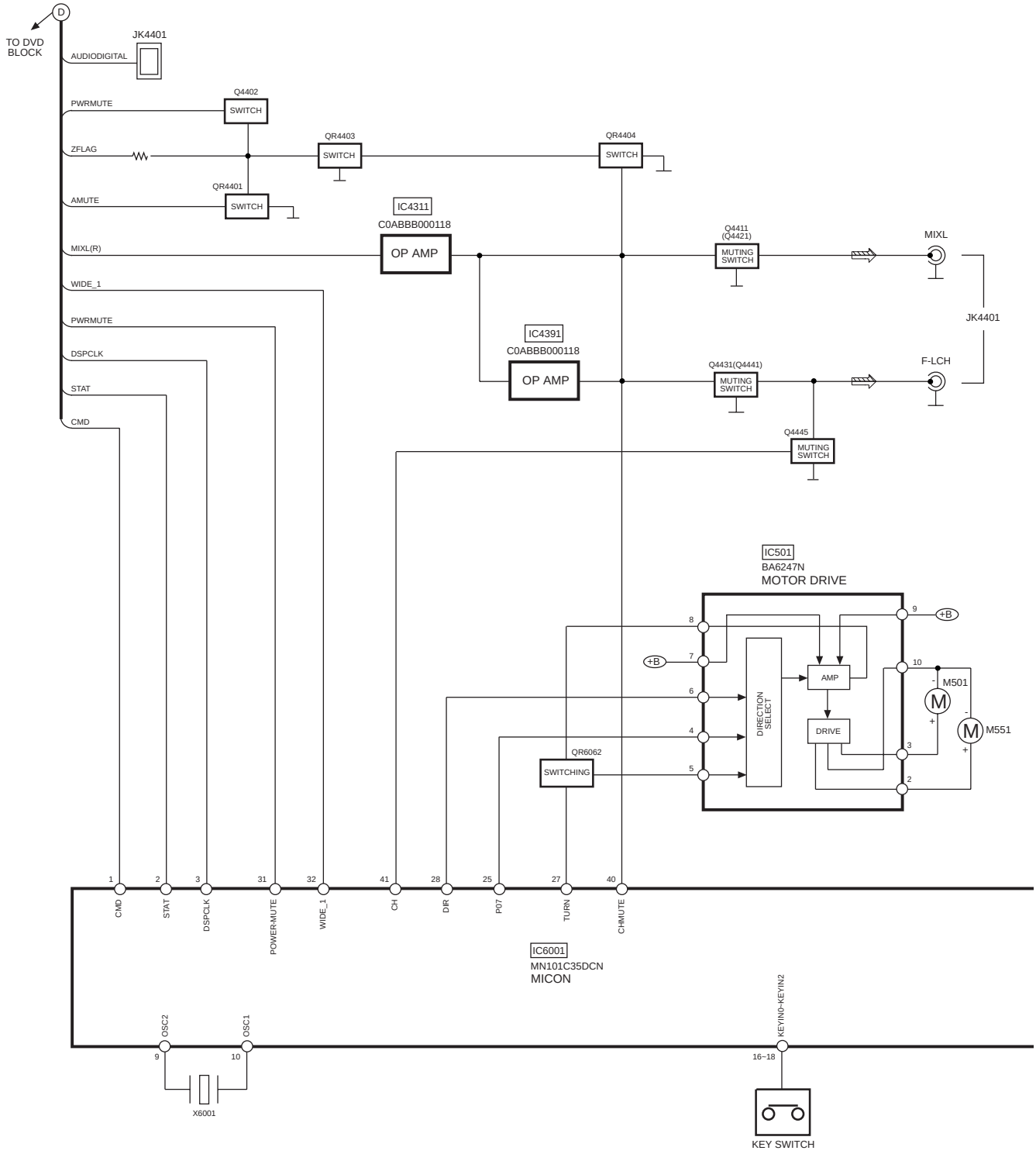
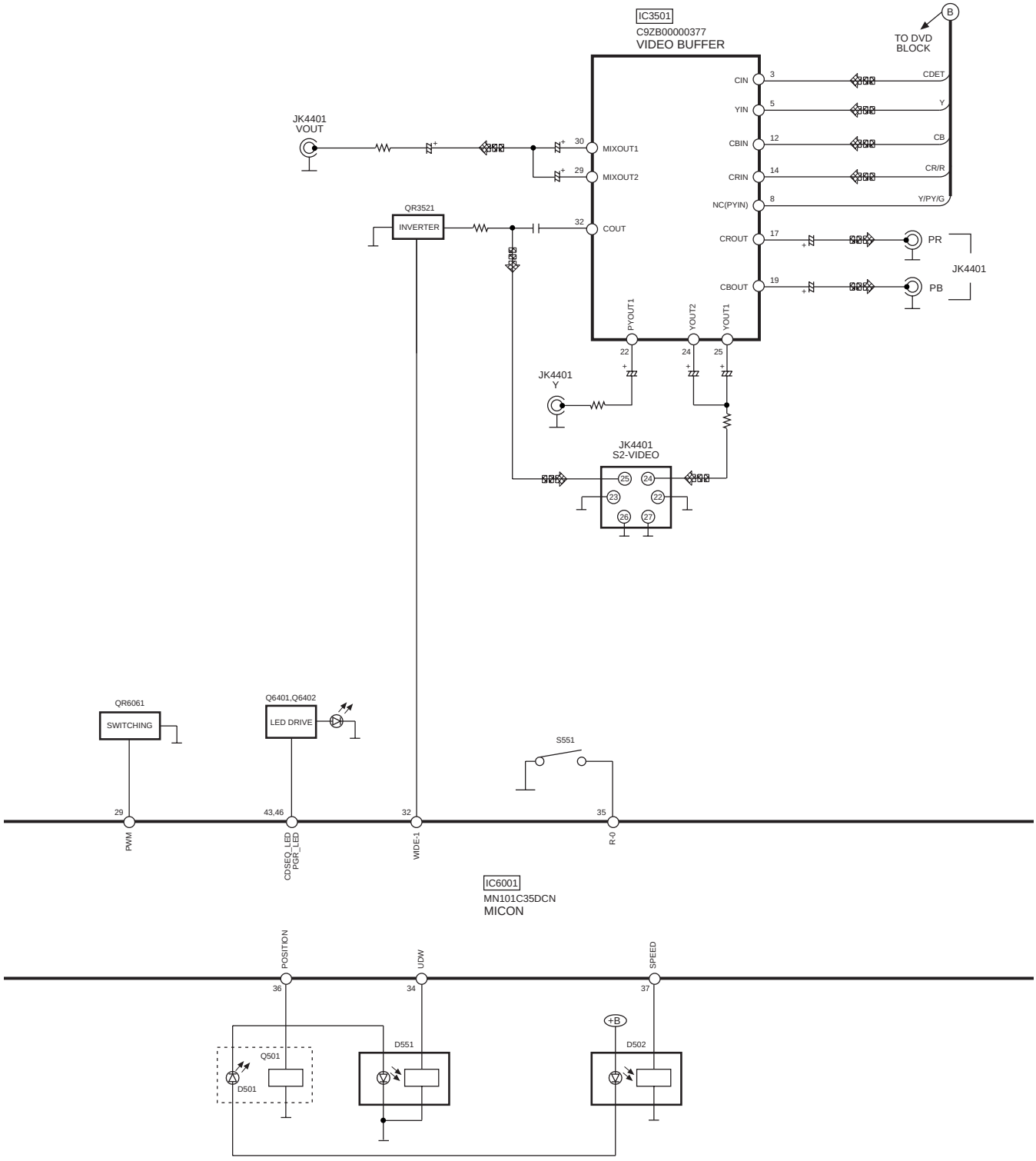
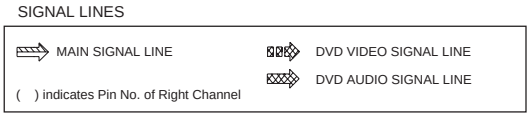
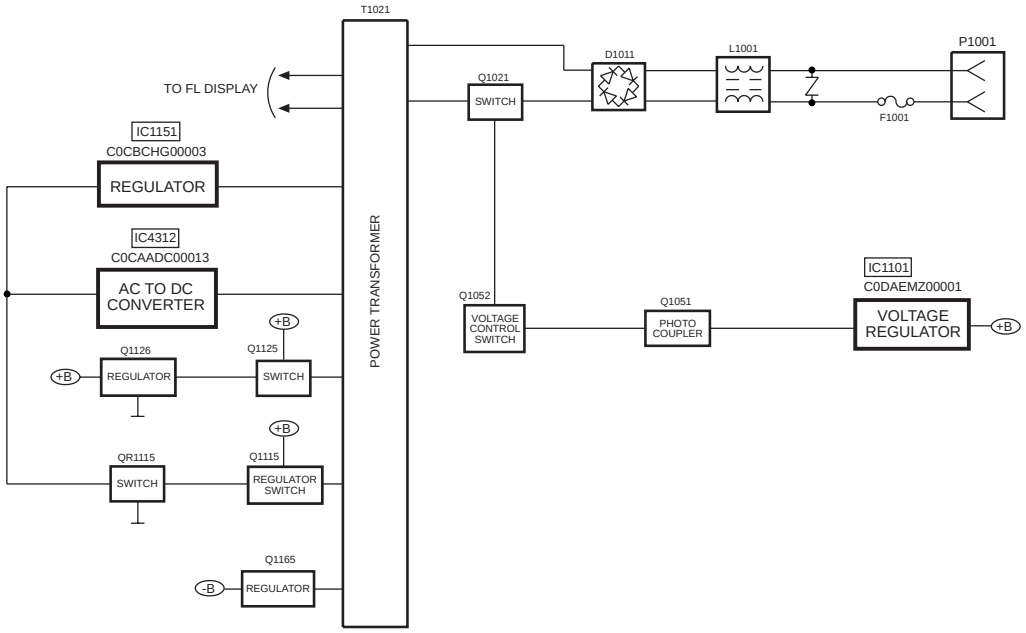
CR/R
CDET
Q3111
AMPLIFIER
VYOUT
VBOUT
VGOUT
Q3101
Q3116
TO MAIN BLOCK
IC3061
C3ABMG000103
16M SDRAM
IC4001
C2HBZG000005
WMA DECODING LSI
IC4021
C0CBCAC00025
VOLTAGE REGULATOR
IC6222
C0JBAA000001
INVERTER
STAT
IC6221
C0JBAA000001
DSPCLK
ZFLAG
AUDIODIGITAL
AMUTE
CMD
WIDE1
IC4041
C0JBAA000260
AND GATE
NRST
MIXL(R)
SBT1
VD
EXTCK
ST
AVTRM
STD
AUDIOD
IECSEL
SRCK
AOUT0
NWEL
BFSX2
NRE
B
LRCK
SYSCLK
BCLKX2
CPU
C
BDX2
AOUT0
AUDIODIGITAL
AUDIOD
LRCK
CLK27M
VCLK
BCLKX0
BCLKR2, BFSR2, BRD2
XE
HR/W
HCS
A0~17
HRIL
BDX2
BDX1
CLKIN
RS
D0~15
HDS1
STATUS
DAC2
ZFLAG
AUDIODIGITAL
AMUTE
CMD
WIDE1
TO MAIN BLOCK

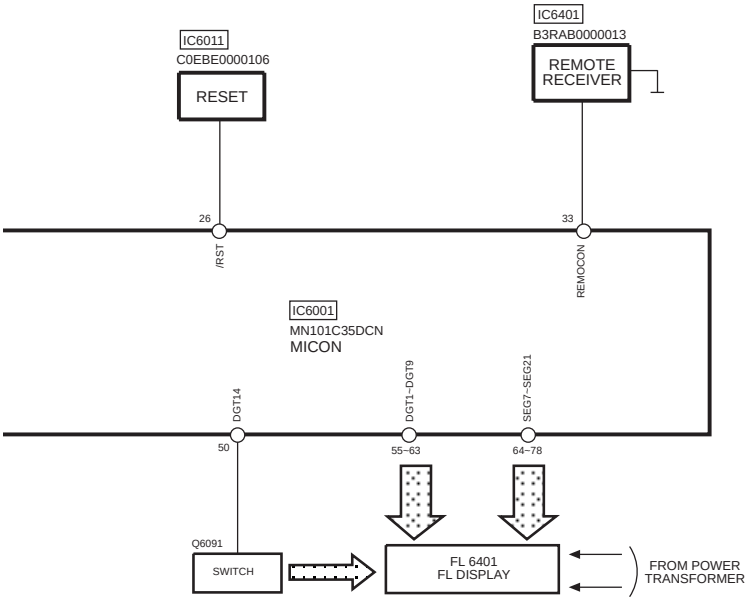

IC3261
C0AJBAR000290
VIDEO SELECTOR
1
2
3
4
5
15
14
13
12
11
10
9
QR3261
SWITCH
IC3701
C1AB00001554
PROGRESSIVE SCAN IC
IC3751
C1AB00001449
VIDEO ENCODER DAC
YOUT2~9
65~72
4~11
Y0~7
YCLKO
117
25
CLKIN
VREFO
89
27
DV/CLKOUT
CSYNO
CREFO
91,92
28,29
NVSYNC
NHSYNC
CBOUT2~9
93,94
97~102
42~49
U0~7
DACB
36
DACA
34
DACC
32
SCL
SDA
30,31
RESETB
40
Q3766
Q3771
Q3761
AMPLIFIER
IC3731
C3ABPJ000017
64M SDRAM
DATA0~29
139~176
2~13,31~42,
45~53,74~85
DQ0~29
ADDR0~10
125~135
24~27,
30~36
AQ0~10
WEN
119
17
WE
CASN
121
18
CAS
RASN
120
19
RAS
BSEL
122
22
BS0
VDD33
114
68
CLK
MEMCLKO
118
8~15
CBIN2~9
40
PIXCLK
47,48
SDA
SCL
49
RESETB
VD
VCLK
SDATA
NRST
NRST
SDATA
PISEL


D
TO DVD BLOCK
JK4401
AUDIODIGITAL
PWRMUTE
Q4402
SWITCH
ZFLAG
QR4403
SWITCH
QR4404
SWITCH
AMUTE
QR4401
SWITCH
IC4311
C0ABBB000118
OP AMP
MIXL(R)
Q4411 (Q4421)
MUTING SWITCH
MIXL
JK4401
WIDE_1
PWRMUTE
IC4391
C0ABBB000118
OP AMP
DSPCLK
STAT
Q4431(Q4441)
MUTING SWITCH
F-LCH
CMD
Q4445
MUTING SWITCH
IC501
BA6247N
MOTOR DRIVE
+B
AMP
DRIVE
DIRECTION SELECT
M501
M551
QR6062
SWITCHING
1 CMD
2 STAT
3 DSPCLK
31 POWER-MUTE
32 WIDE_1
41 CH
28 DIR
25 P07
27 TURN
40 CHMUTE
IC6001
MN101C35DCN
MICON
OSC2
OSC1
9
10
X6001
KEYIN0-KEYIN2
16–18
KEY SWITCH


IC3501
C9ZB00000377
VIDEO BUFFER
TO DVD BLOCK
B
JK4401 VOUT
MIXOUT1
MIXOUT2
QR3521
INVERTER
COUT
CIN
YIN
CBIN
CRIN
NC(PYIN)
CROUT
CBOUT
CDET
Y
CB
CR/R
Y/PY/G
PR
PB
JK4401
PYOUT1
YOUT2
YOUT1
JK4401 Y
JK4401 S2-VIDEO
QR6061
SWITCHING
Q6401,Q6402
LED DRIVE
S551
PWM
CDSEQ_LED
PGR_LED
WIDE-1
R-0
IC6001
MN101C35DCN
MICON
POSITION
UDW
SPEED
Q501
D501
D551
+B
D502


SIGNAL LINES
MAIN SIGNAL LINE
DVD VIDEO SIGNAL LINE
DVD AUDIO SIGNAL LINE
( ) indicates Pin No. of Right Channel


T1021
TO FL DISPLAY
IC1151
C0CBCHG00003
REGULATOR
IC4312
C0CAADC00013
AC TO DC CONVERTER
Q1126
REGULATOR
+B
Q1125
SWITCH
QR1115
SWITCH
Q1115
REGULATOR SWITCH
Q1165
REGULATOR
-B
POWER TRANSFORMER
Q1021
SWITCH
D1011
L1001
F1001
P1001
Q1052
VOLTAGE CONTROL SWITCH
Q1051
PHOTO COUPLER
IC1101
C0DAEMZ00001
VOLTAGE REGULATOR


IC6011
C0EBE0000106
RESET
IC6401
B3RAB0000013
REMOTE RECEIVER
26
/RST
33
REMOCON
IC6001
MN101C35DCN
MICON
DGT14
50
DGT1–DGT9
55–63
SEG7–SEG21
64–78
Q6091
SWITCH
FL 6401
FL DISPLAY
FROM POWER TRANSFORMER

16 Schematic Diagram

(All schematic diagrams may be modified at any time with the development of the new technology)

Note:

S551 : Switch
S6401 : Stop switch
S6402 : Pause switch
S6403 : Play switch
S6404 : Disc Exchange switch
S6405 : Disc Skip switch
S6406 : Reverse switch
S6407 : Forward switch
S6408 : Open/ Close switch
S6409 : Power switch
S6410 : Progressive switch
S6411 : CD SEQ switch
SW2501 : Leaf switch

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveformsdepending upon the internal impedance of the tester or the measuring unit.

No mark	: Playback	<< >>	: Rec	< >	: FM
(( ))	: CD	( )	: AM	[ ]	: AUX

- **Importance safety notice :**

  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. Whenreplacing any of components, be sure to use only manufacturer´s specified parts shown in the parts list.

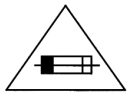
Caution !

IC, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE **F1001, 1.6A, 125V FUSE.**



RISK OF FIRE-REPLACE FUSE AS MARKED.

FUSE CAUTION

These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire harzard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de même type. Ce dernier est indiqué là qù le présent symbole est apposé.

CAUTION: TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

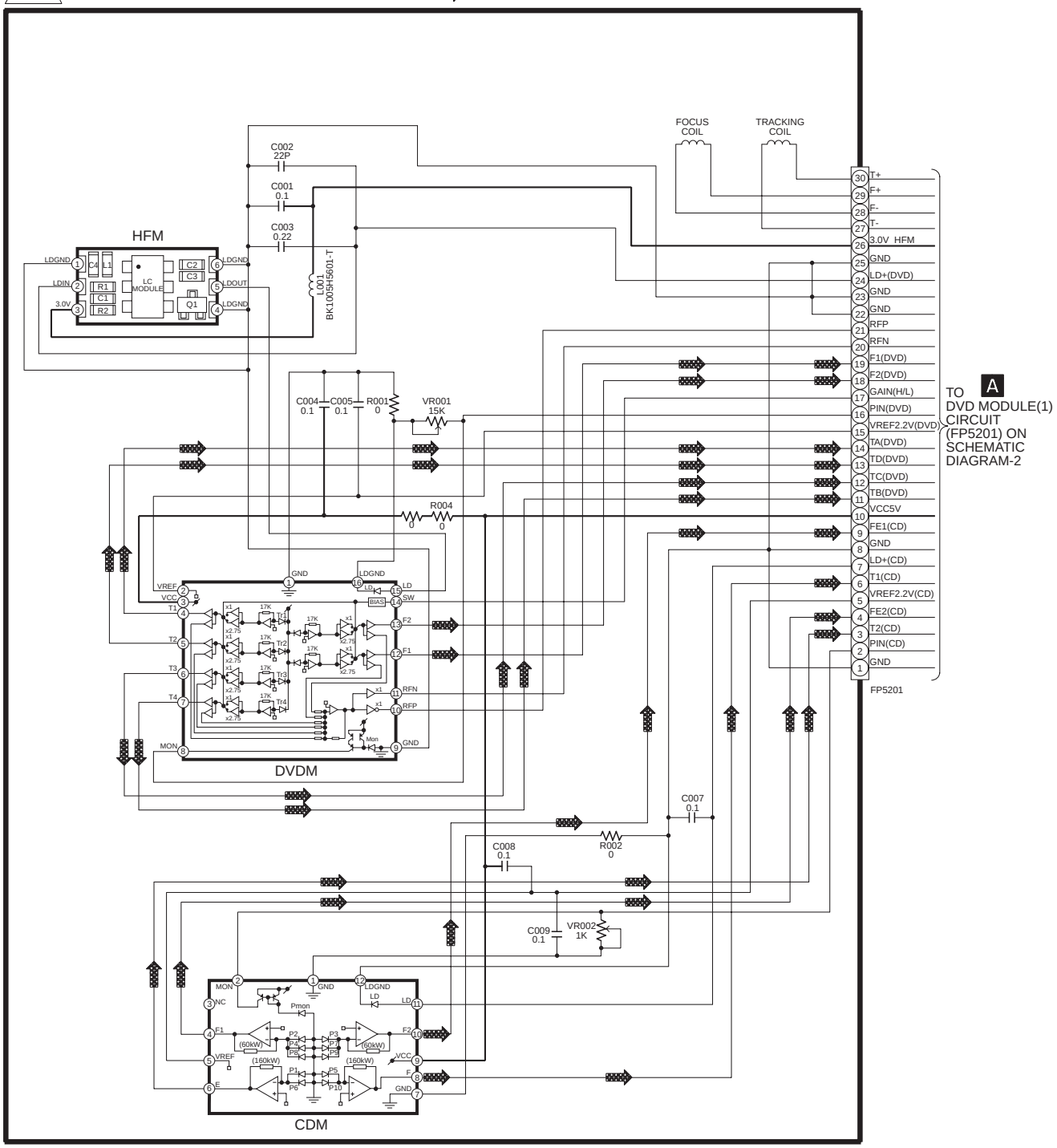
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

SCHEMATIC DIAGRAM-1

OPTICAL PICKUP UNIT

: +B SIGNAL LINE

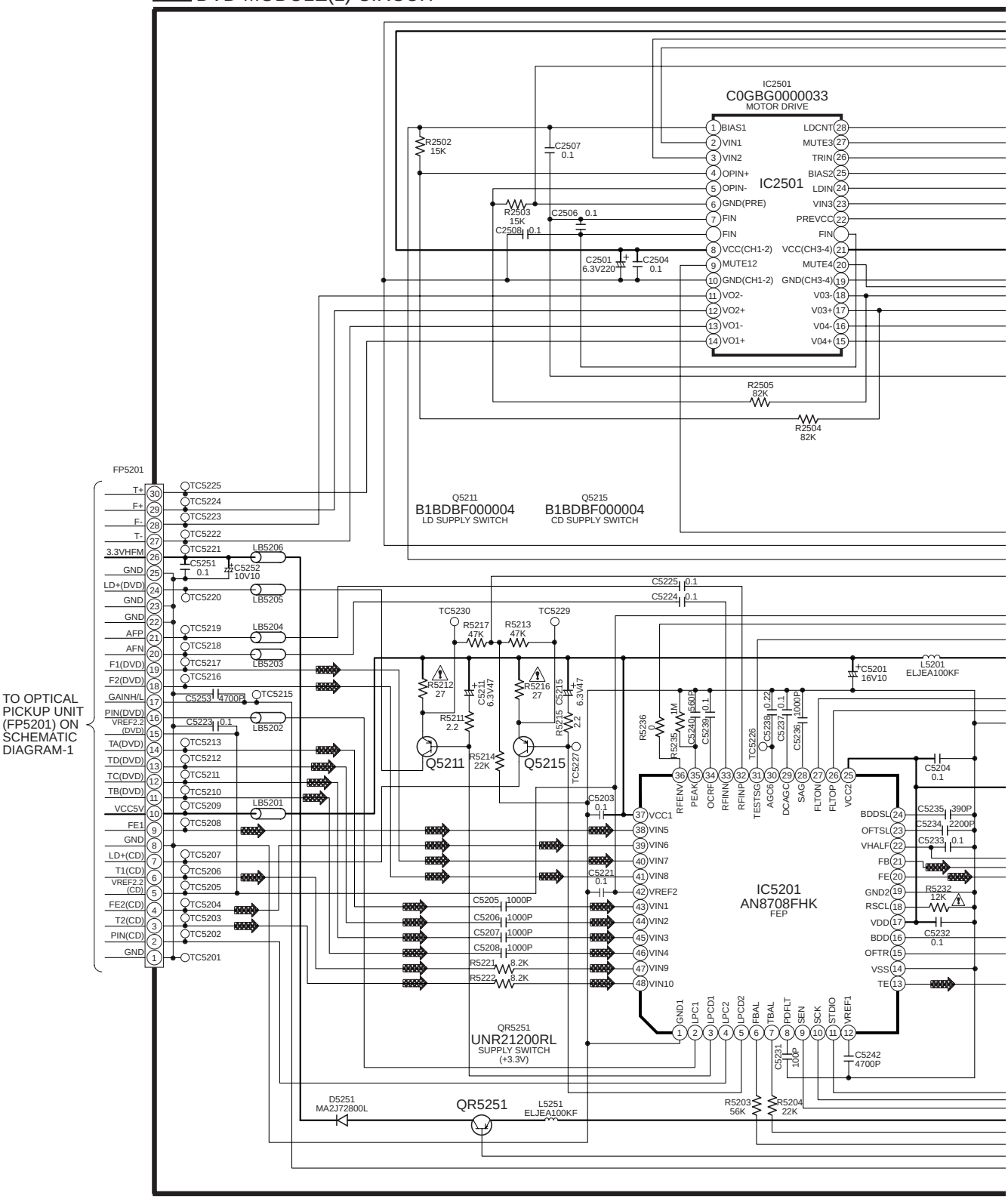
: CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-2

A DVD MODULE(1) CIRCUIT

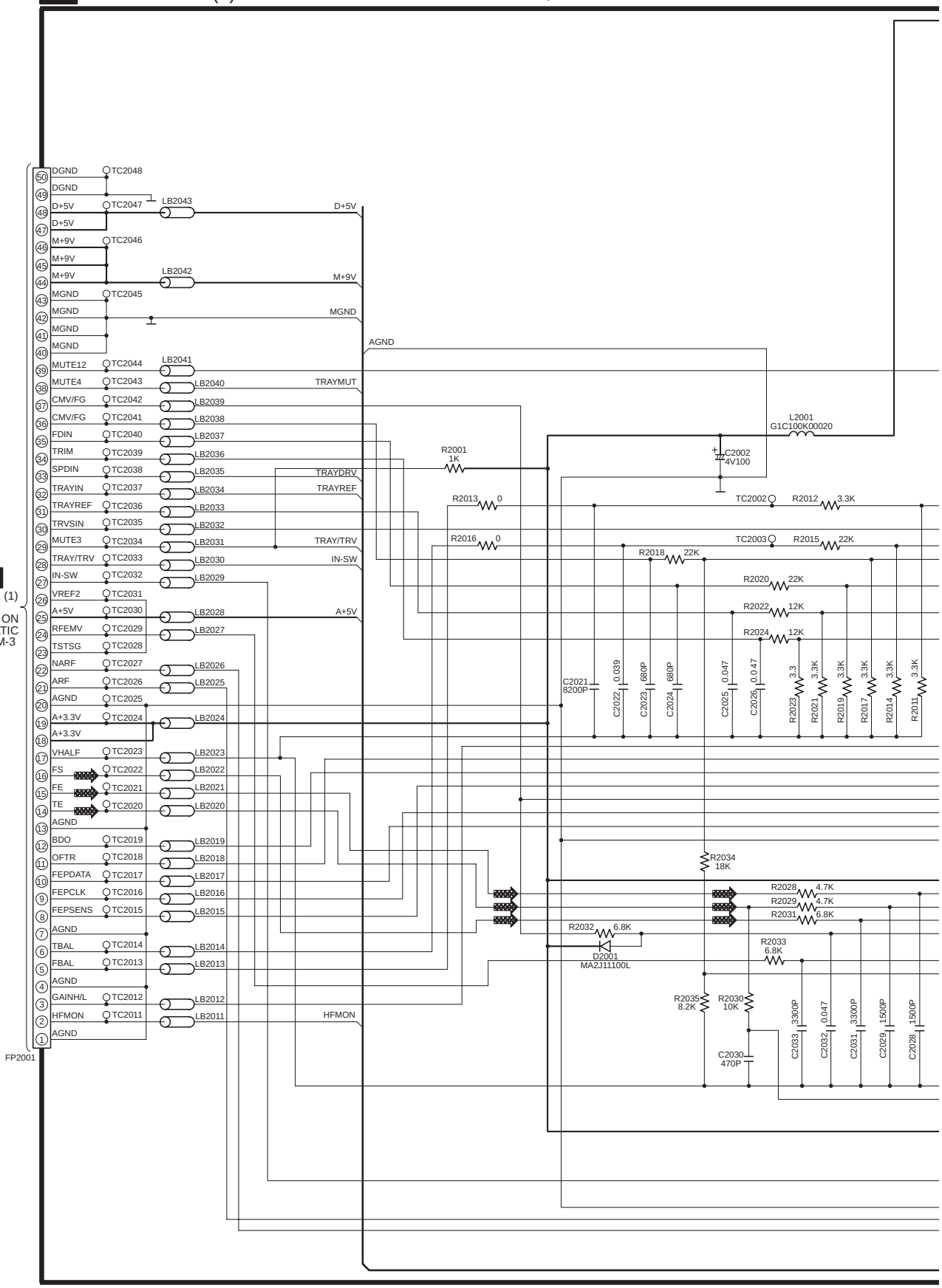
: +B SIGNAL LINE
: CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-4

B DVD MODULE (2) CIRCUIT

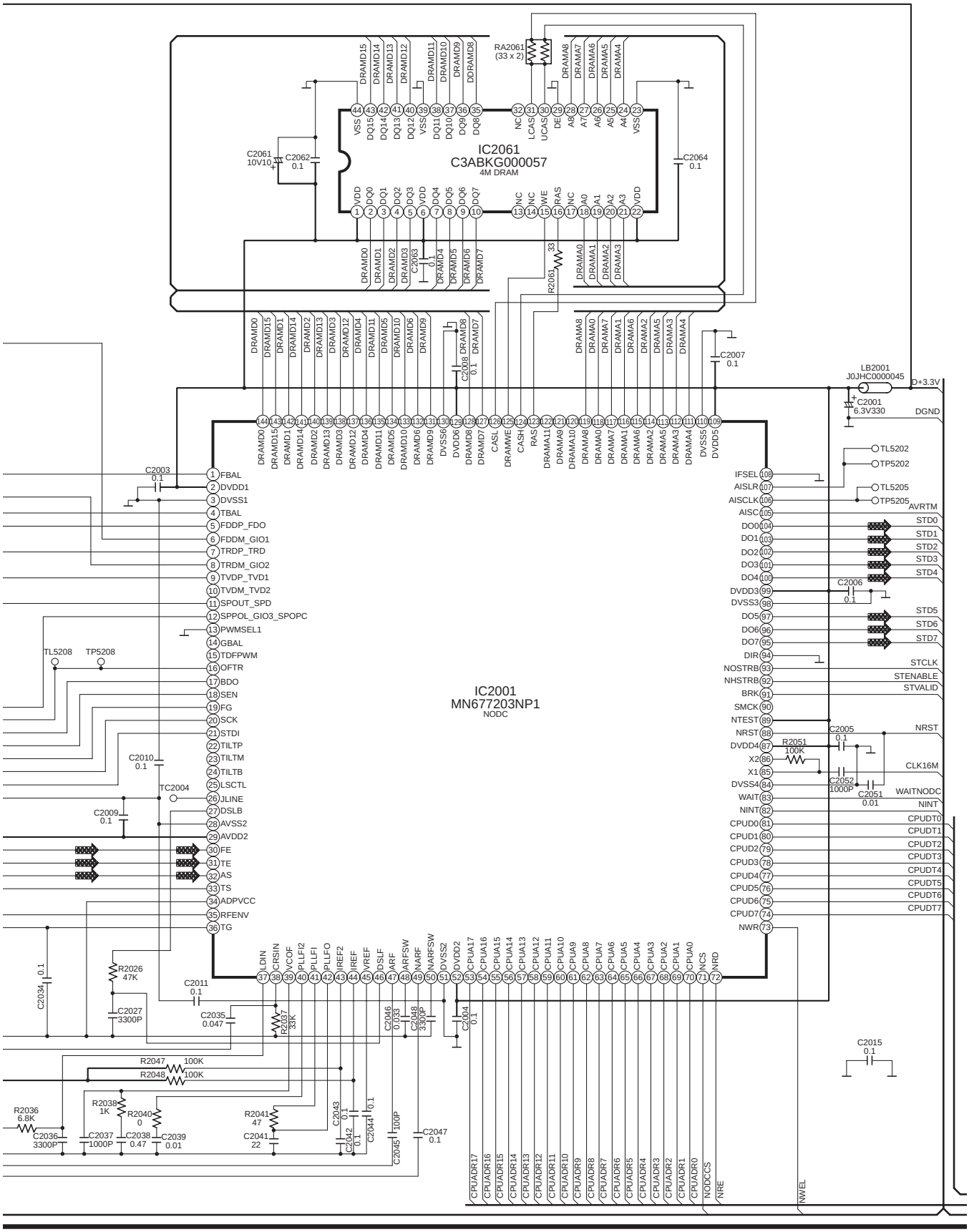
——— : +B SIGNAL LINE ⇒ : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-5

B DVD MODULE (2) CIRCUIT

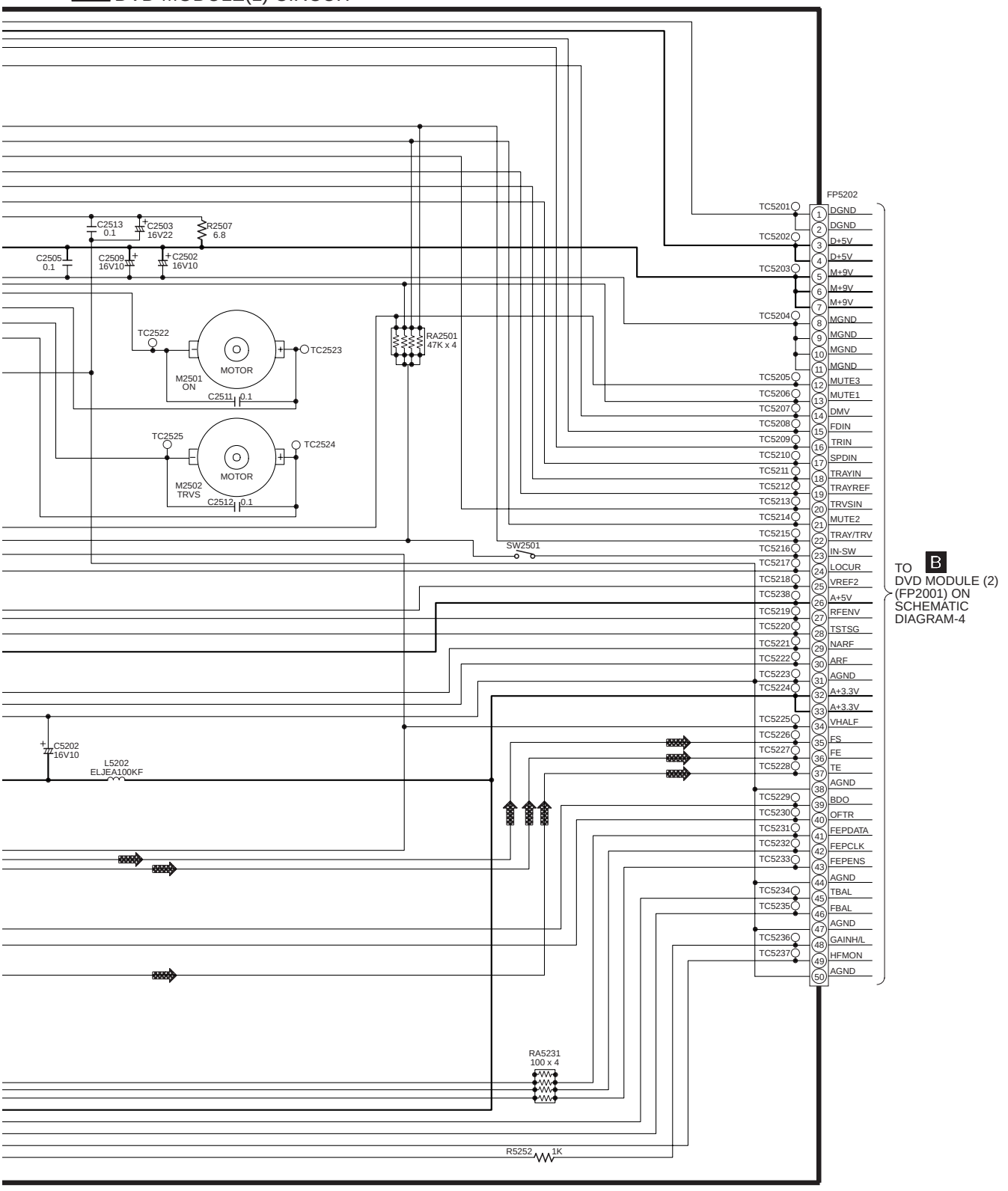
——— : +B SIGNAL LINE ⇒ : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-3

A DVD MODULE(1) CIRCUIT

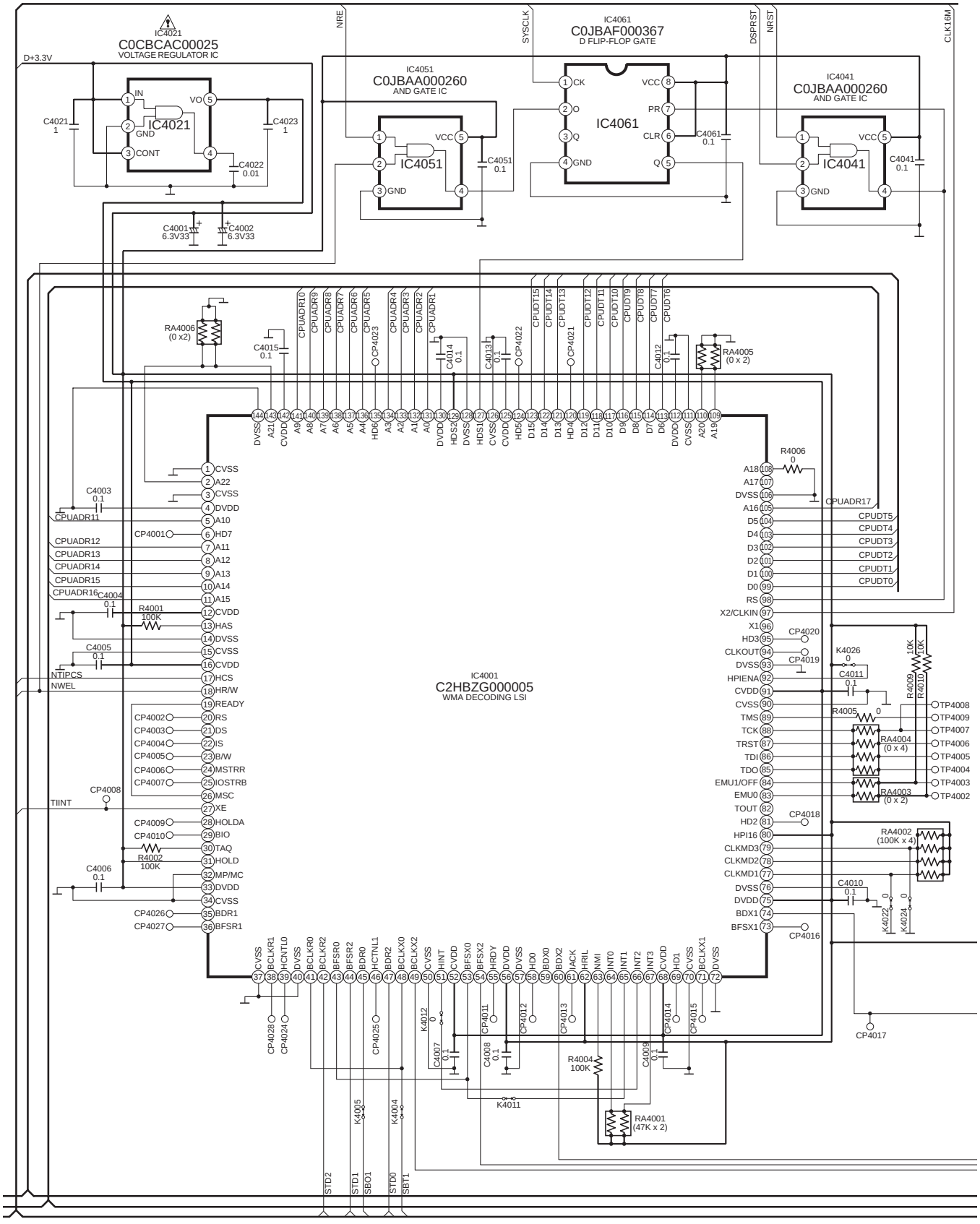
: +B SIGNAL LINE
: CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-6

B DVD MODULE (2) CIRCUIT

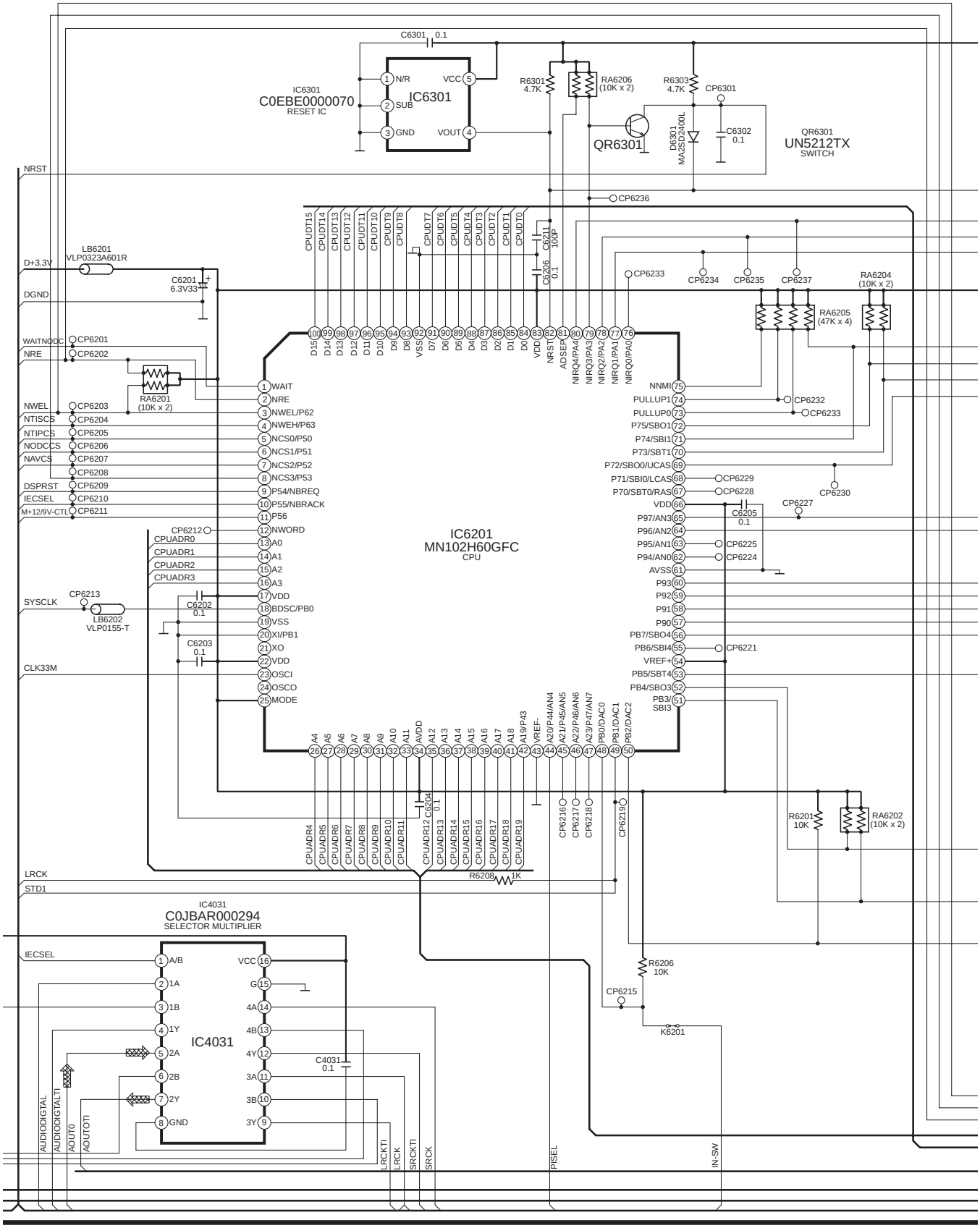
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-7

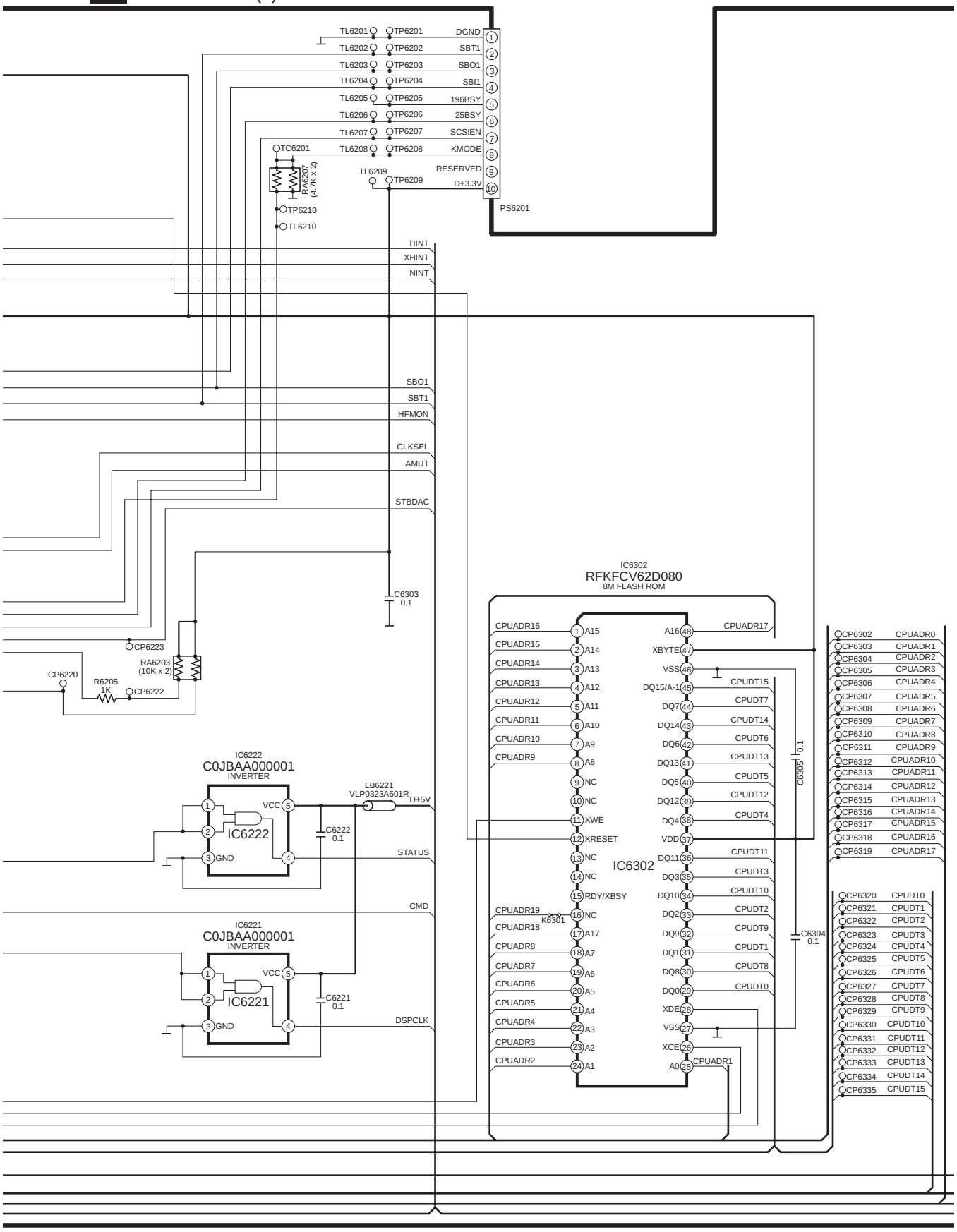
B DVD MODULE (2) CIRCUIT

——— : +B SIGNAL LINE : DVD AUDIO SIGNAL LINE



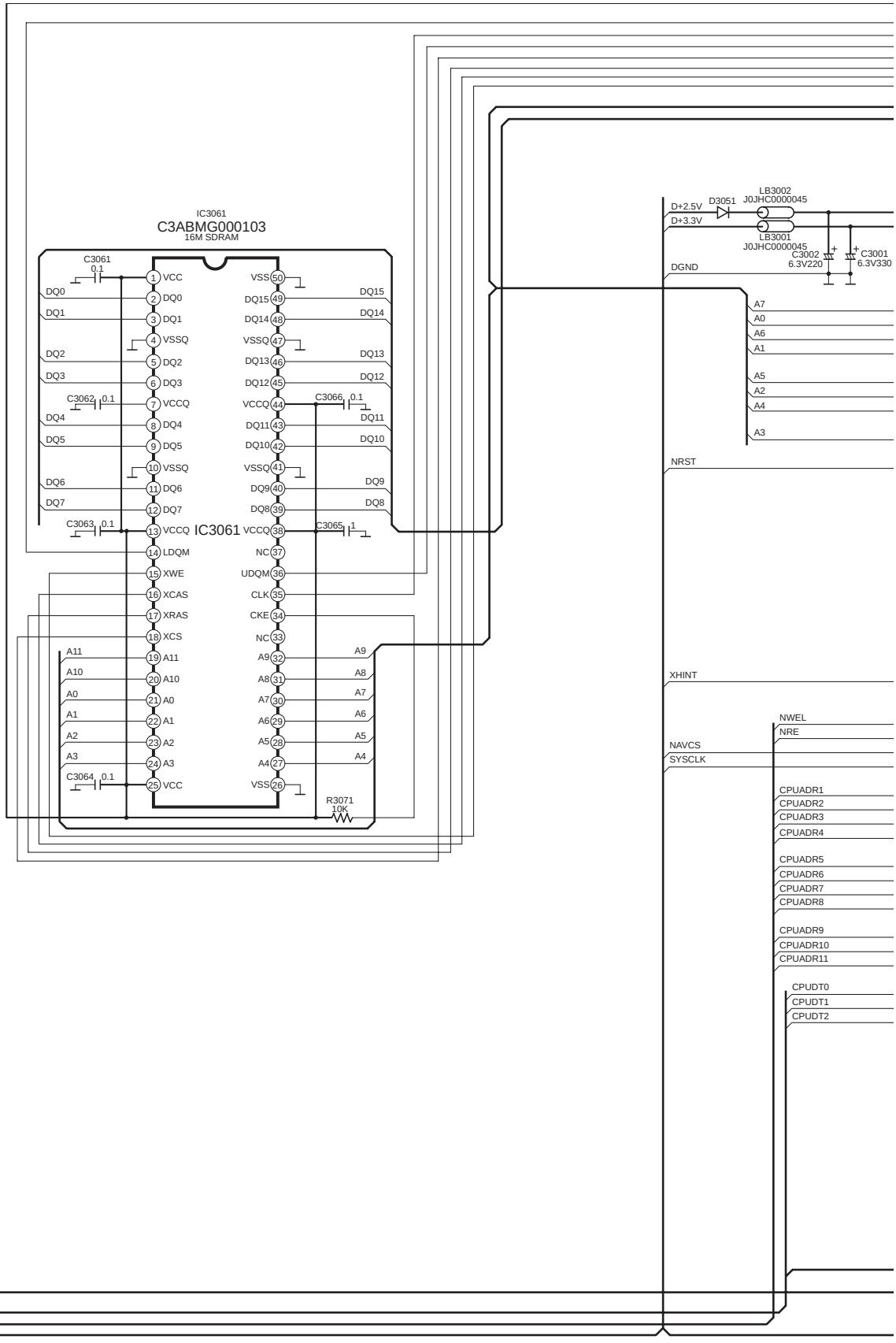
SCHEMATIC DIAGRAM-8

B DVD MODULE (2) CIRCUIT ——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-9

B DVD MODULE (2) CIRCUIT ——— : +B SIGNAL LINE



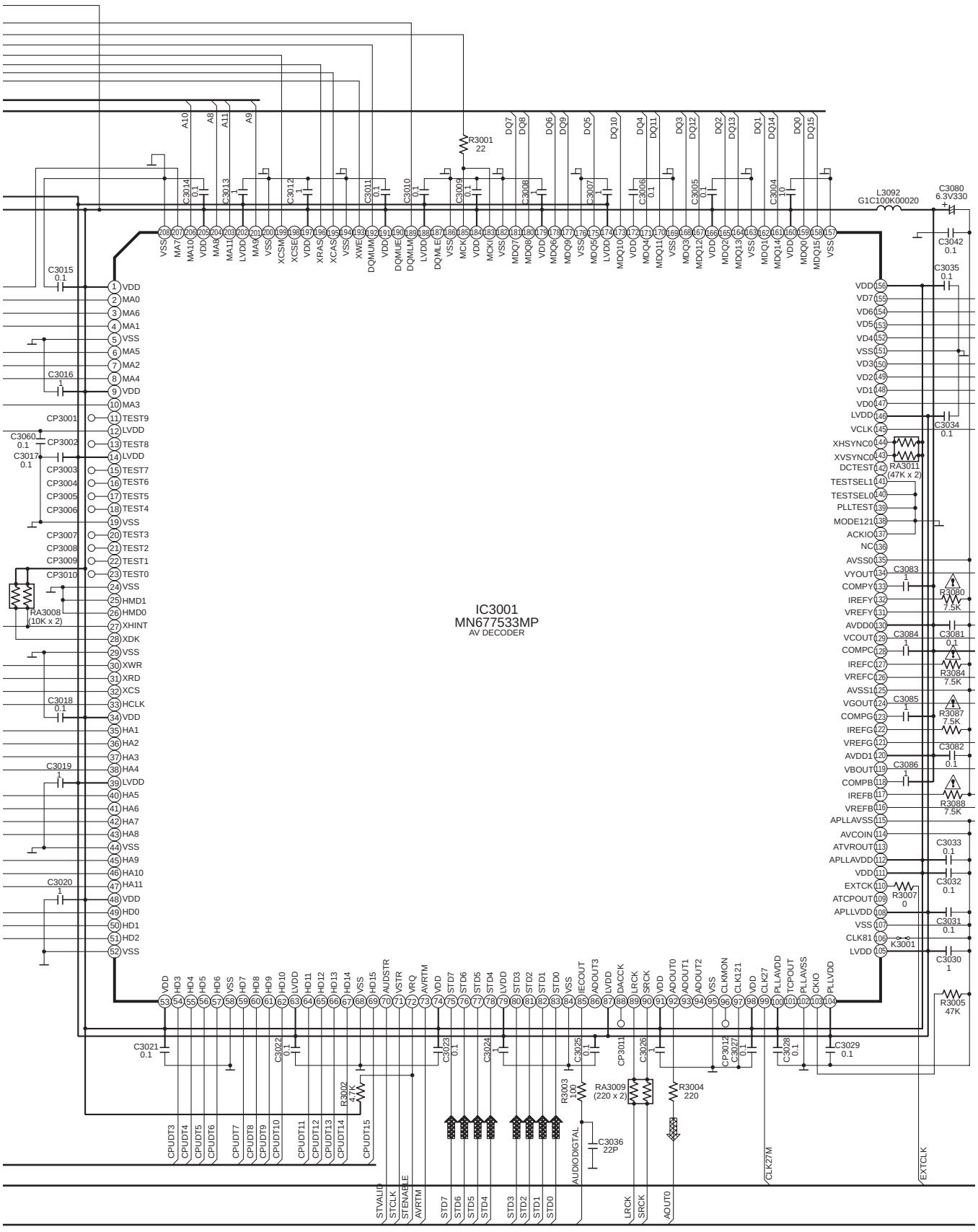
SCHEMATIC DIAGRAM-10

B DVD MODULE (2) CIRCUIT

: +B SIGNAL LINE

: DVD(AUDIO) SIGNAL LINE

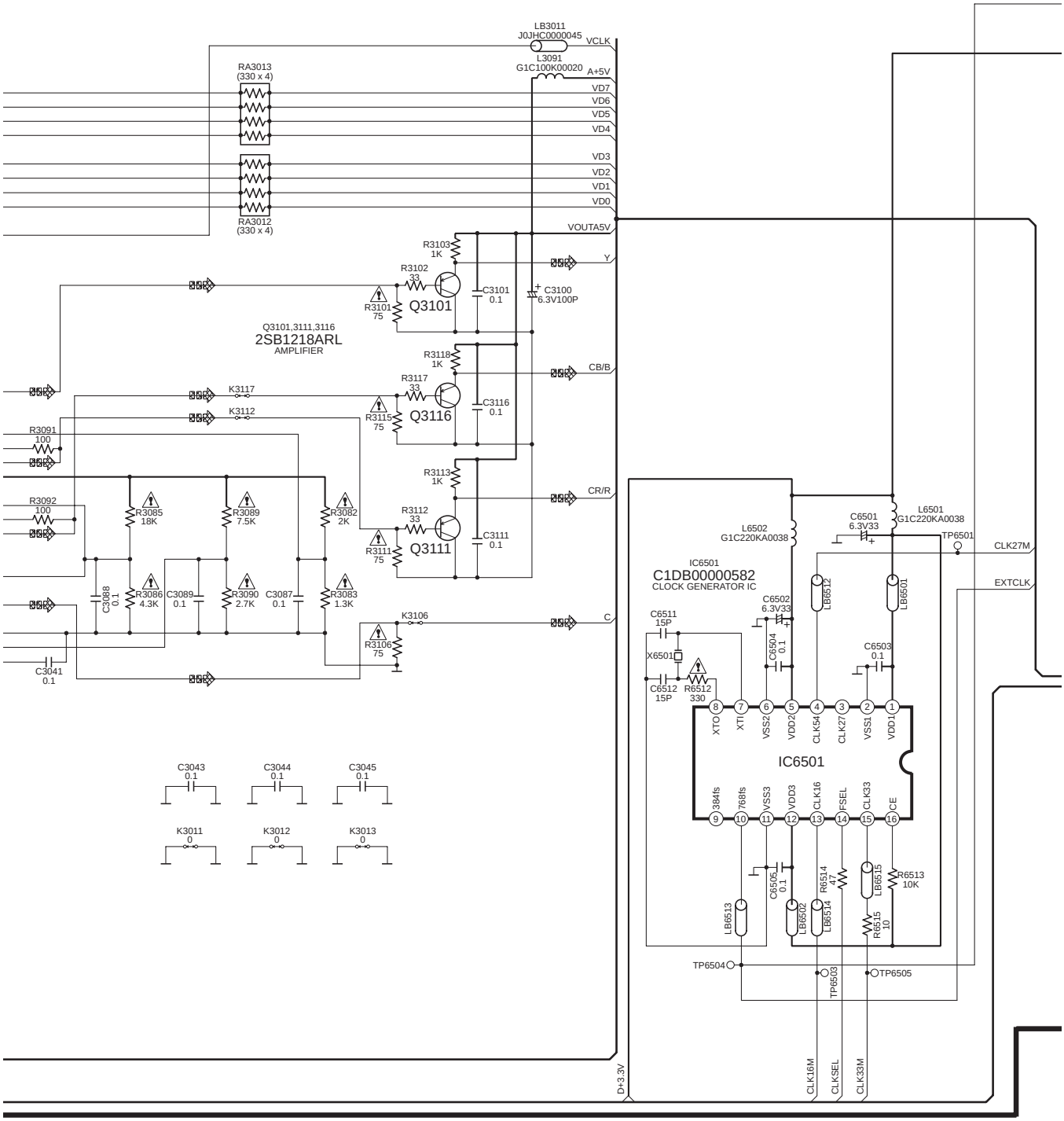
: CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-11

B DVD MODULE (2) CIRCUIT

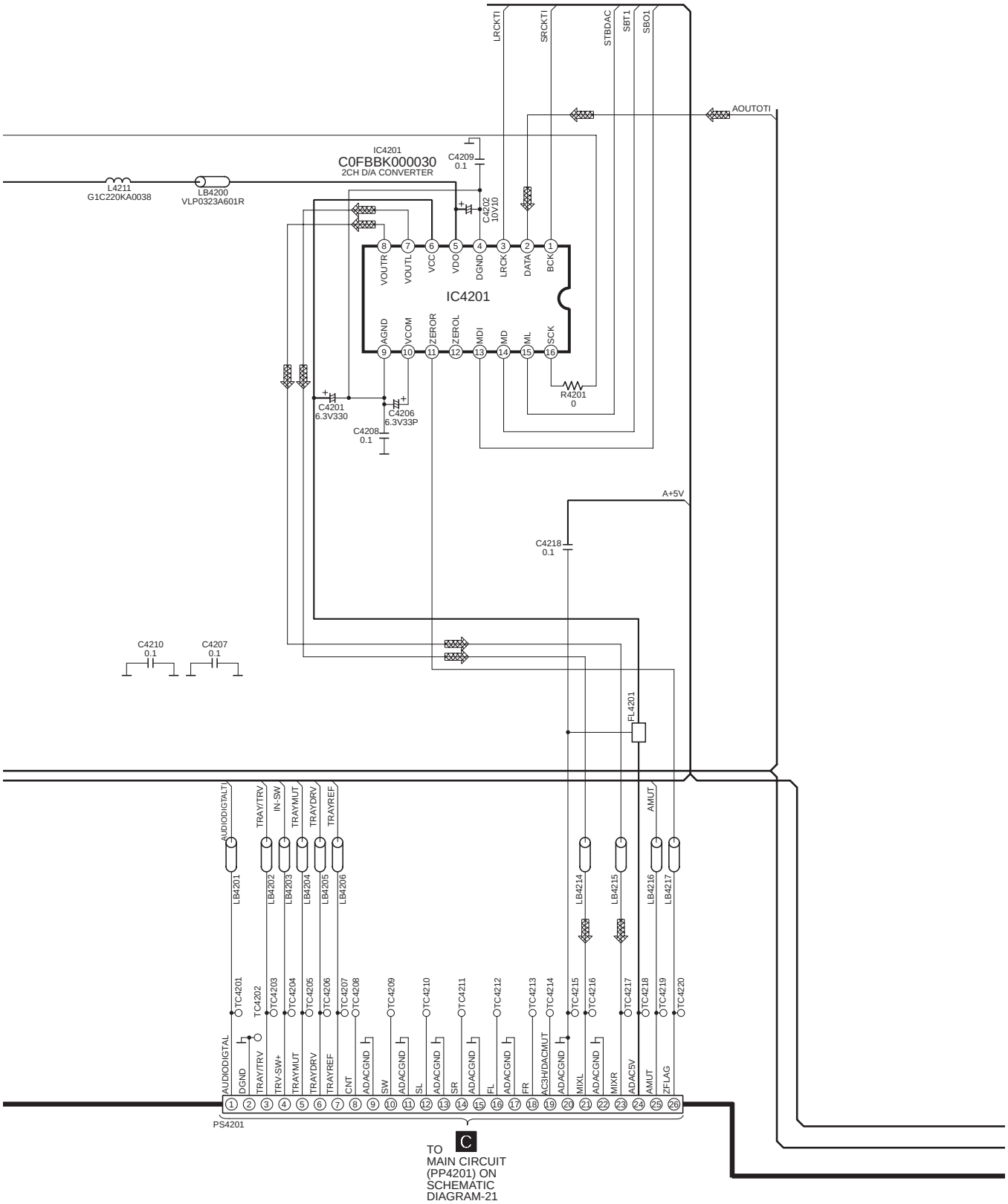
——— : +B SIGNAL LINE : DVD(VIDEO) SIGNAL LINE



SCHEMATIC DIAGRAM-12

B DVD MODULE (2) CIRCUIT

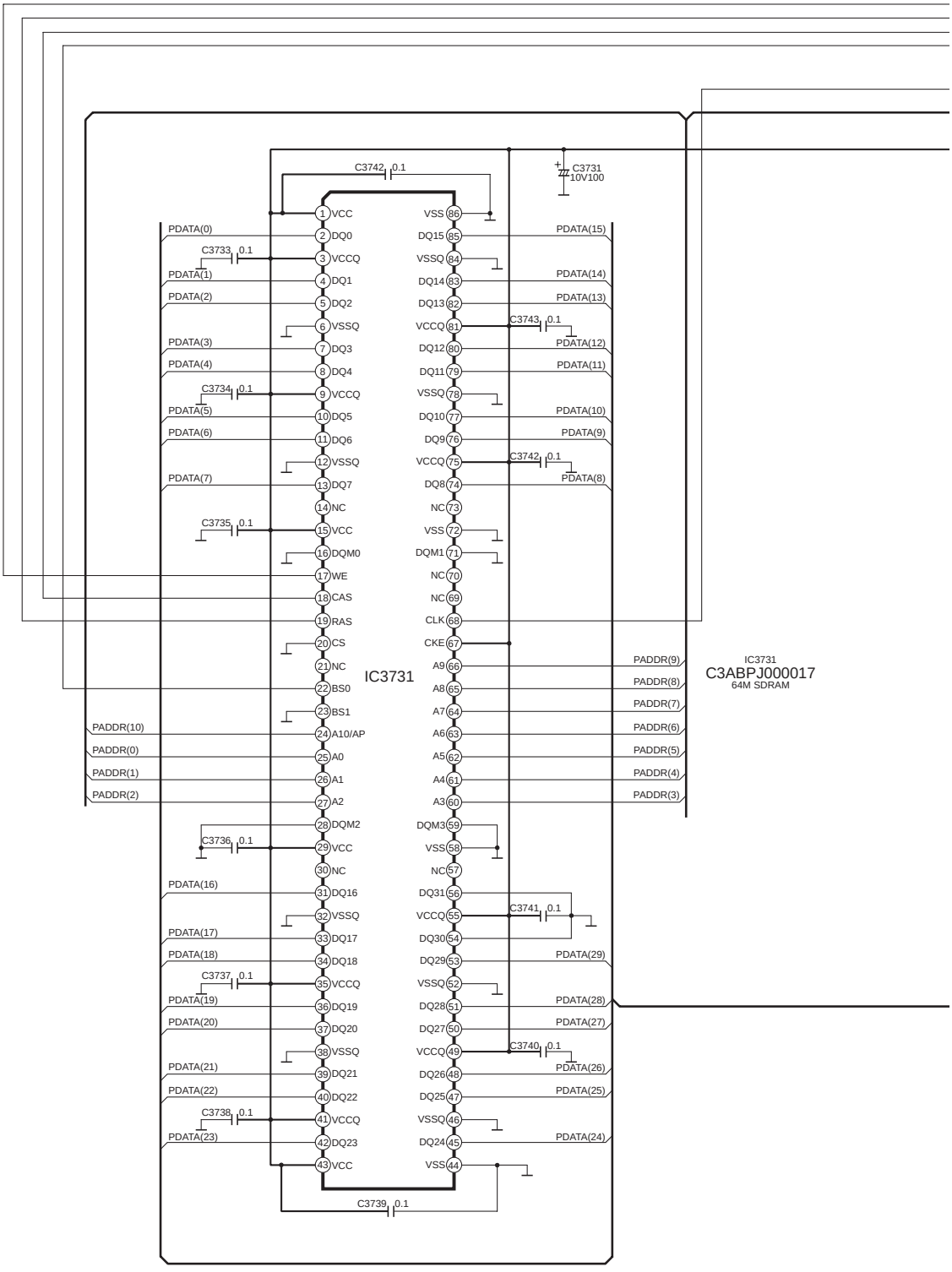
: +B SIGNAL LINE : DVD(AUDIO) SIGNAL LINE



SCHEMATIC DIAGRAM-13

B DVD MODULE (2) CIRCUIT

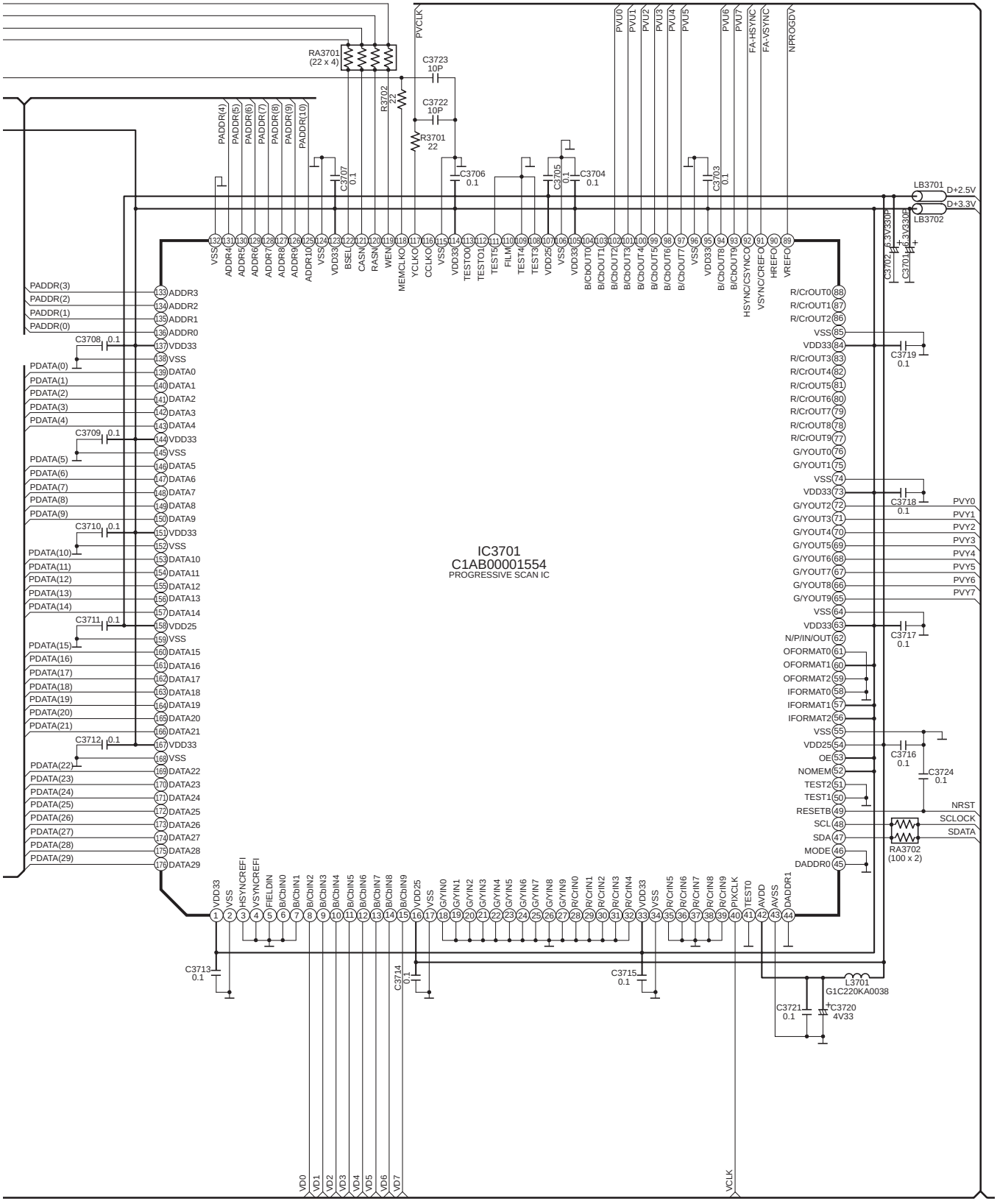
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-14

B DVD MODULE (2) CIRCUIT

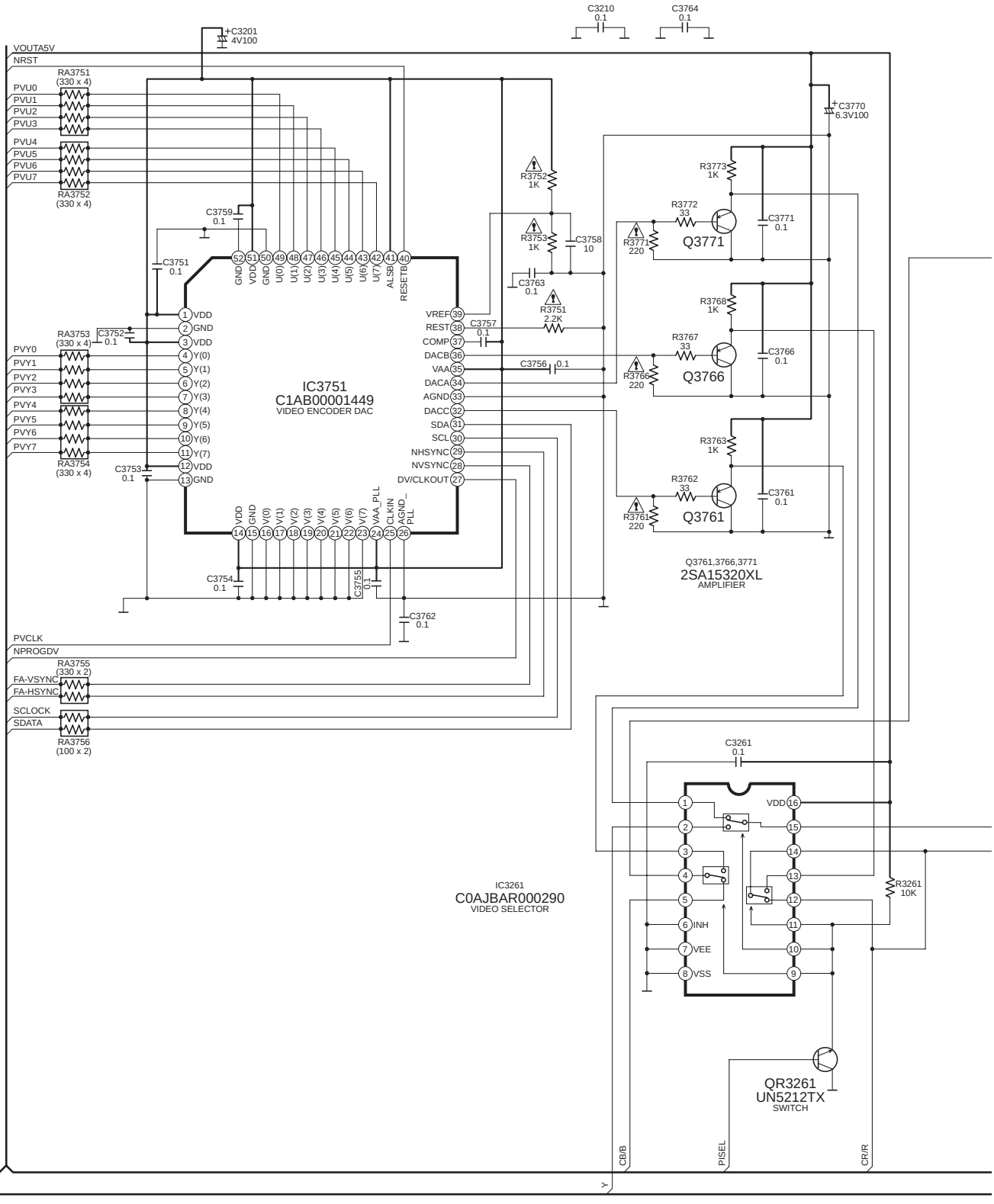
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-15

B DVD MODULE (2) CIRCUIT

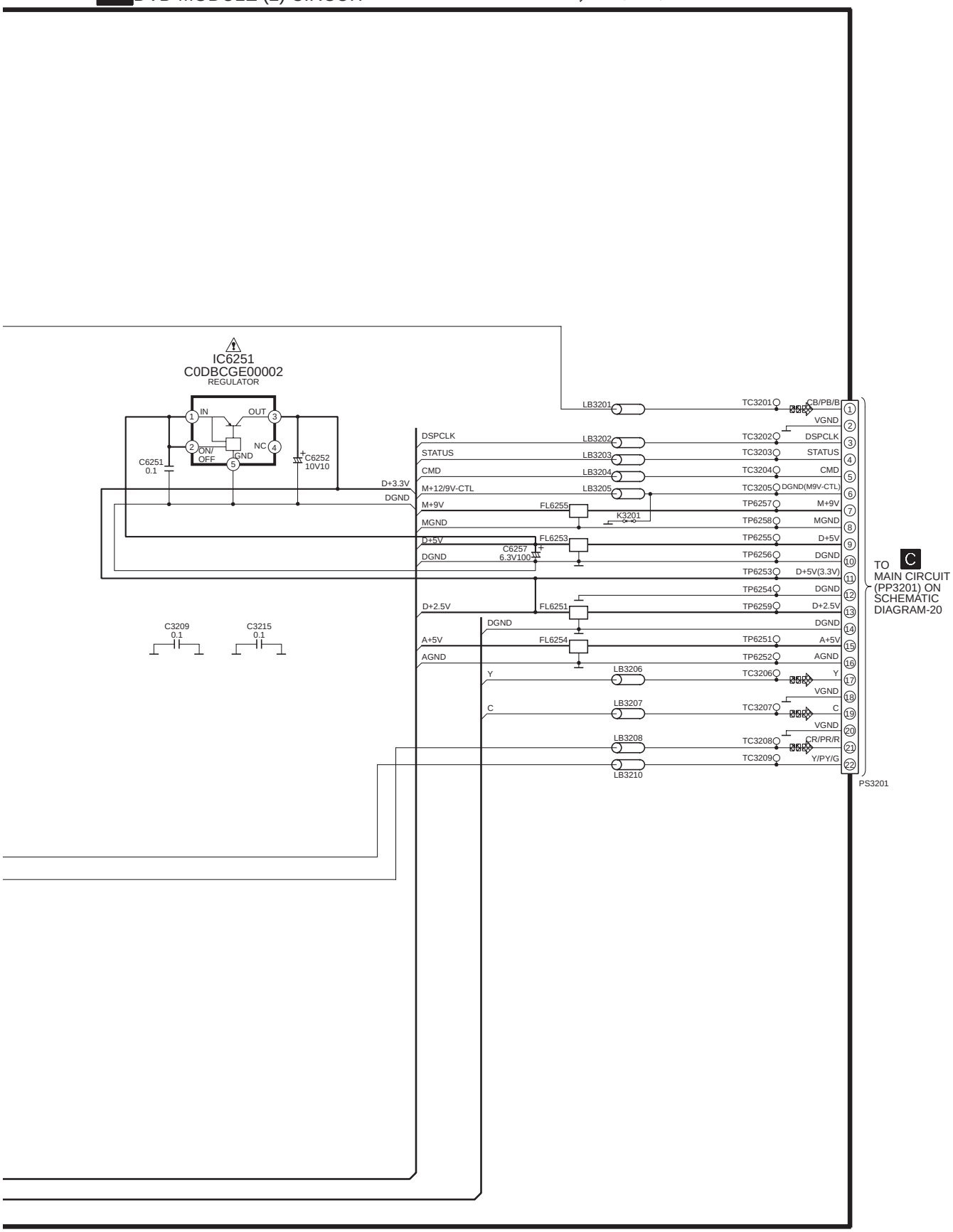
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-16

B DVD MODULE (2) CIRCUIT

——— : +B SIGNAL LINE : DVD(VIDEO) SIGNAL LINE

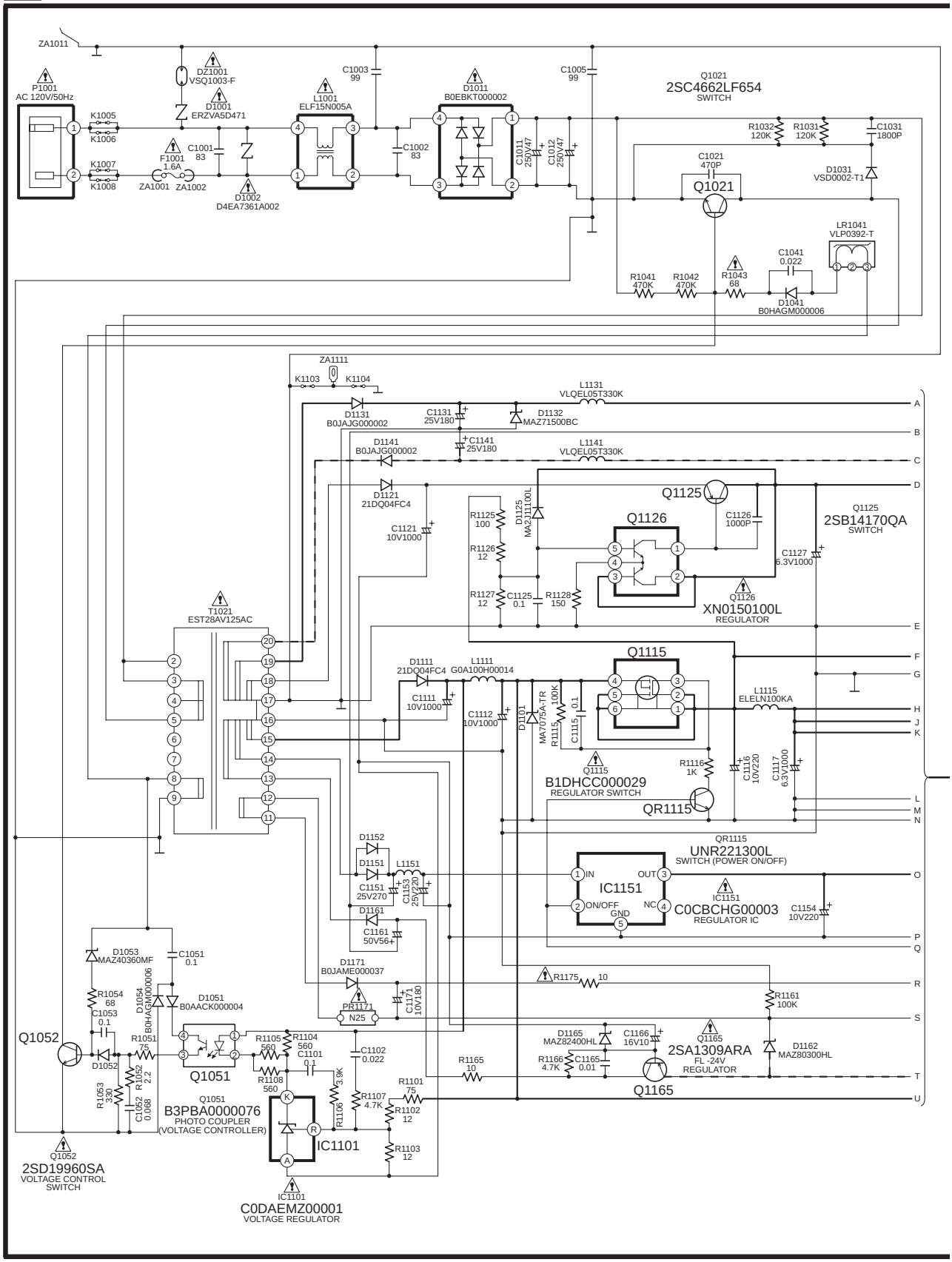


SCHEMATIC DIAGRAM-17

C MAIN CIRCUIT

– – – : -B SIGNAL LINE

——— : +B SIGNAL LINE

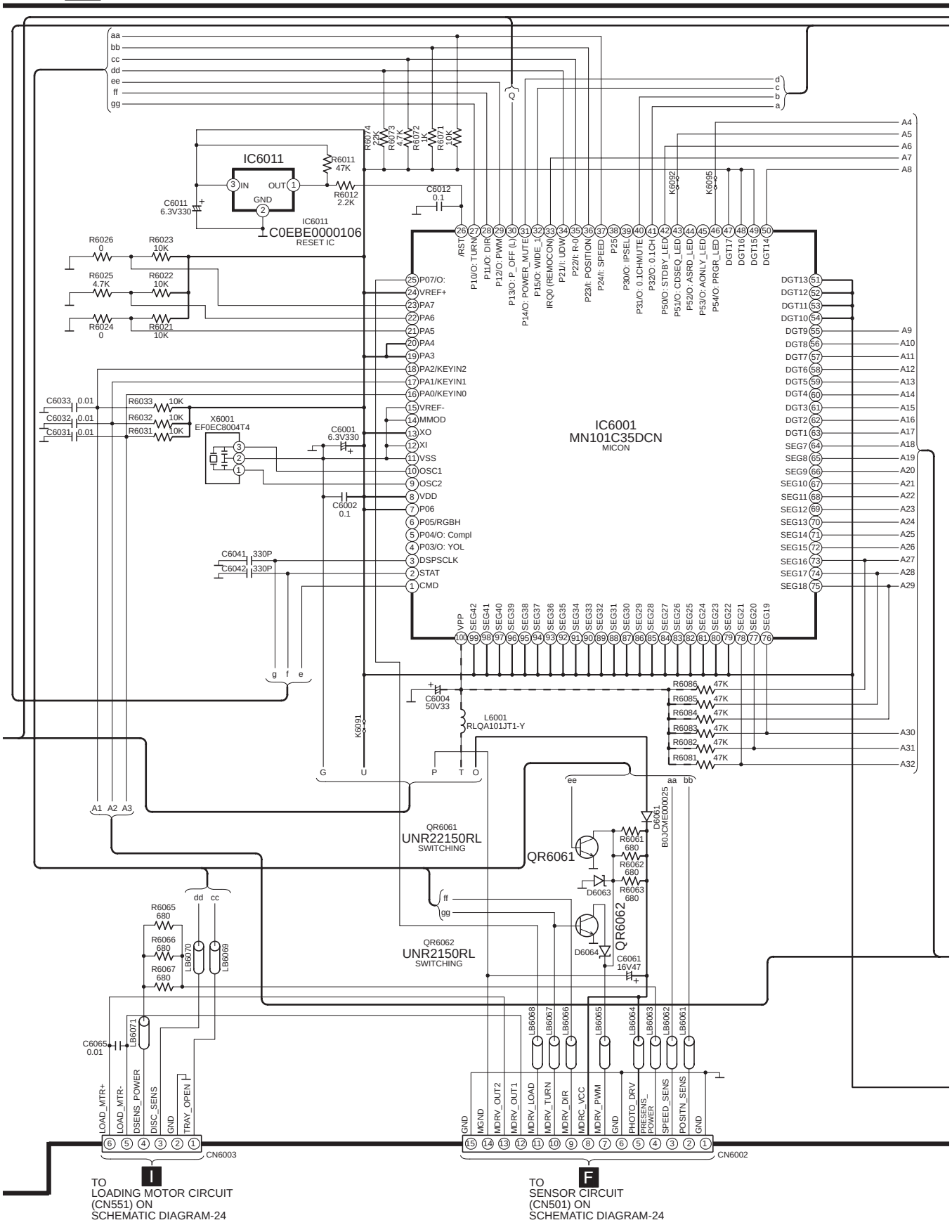


SCHEMATIC DIAGRAM-18

C MAIN CIRCUIT

– – – : -B SIGNAL LINE

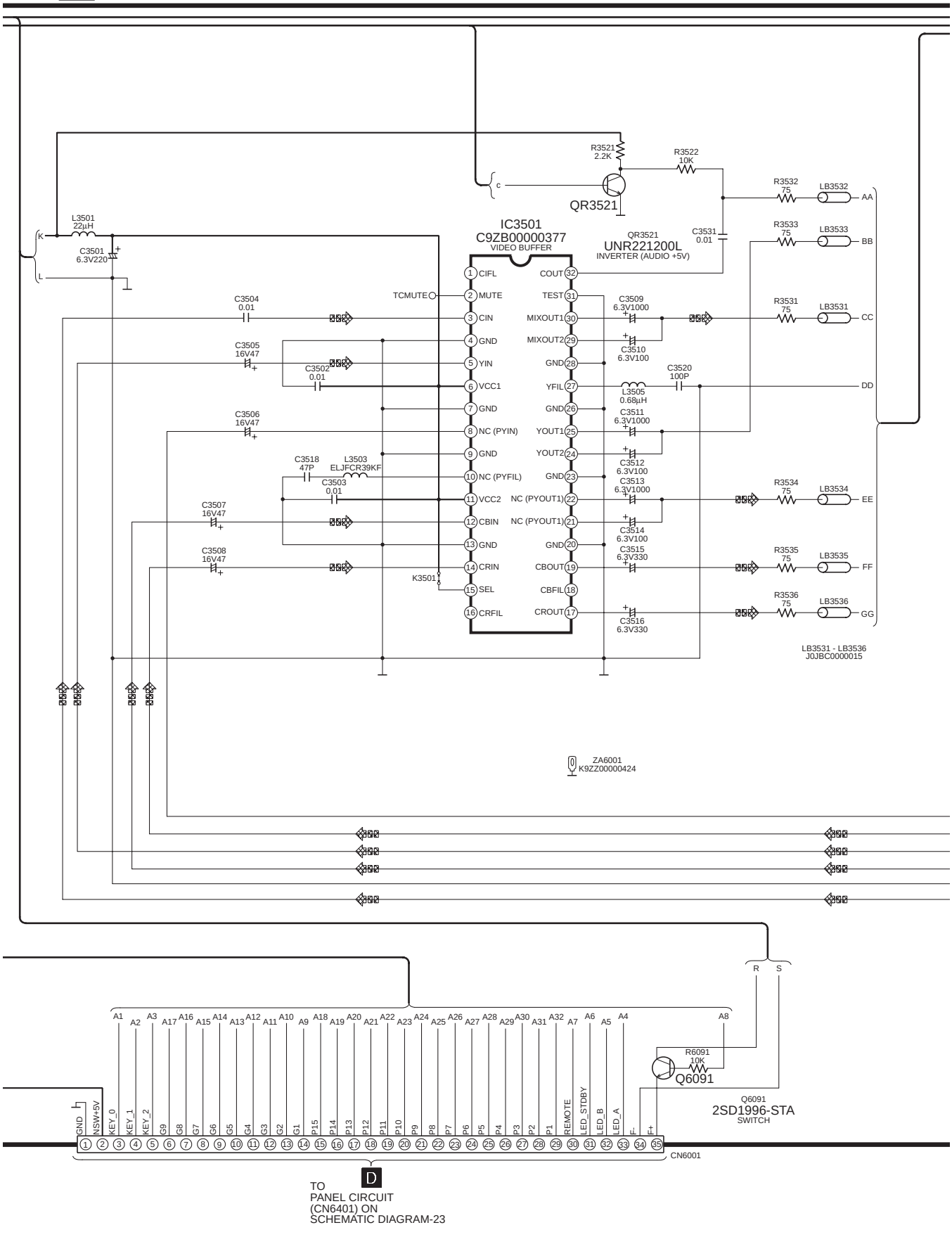
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-19

C MAIN CIRCUIT

——— : +B SIGNAL LINE ⋙ : DVD VIDEO SIGNAL LINE

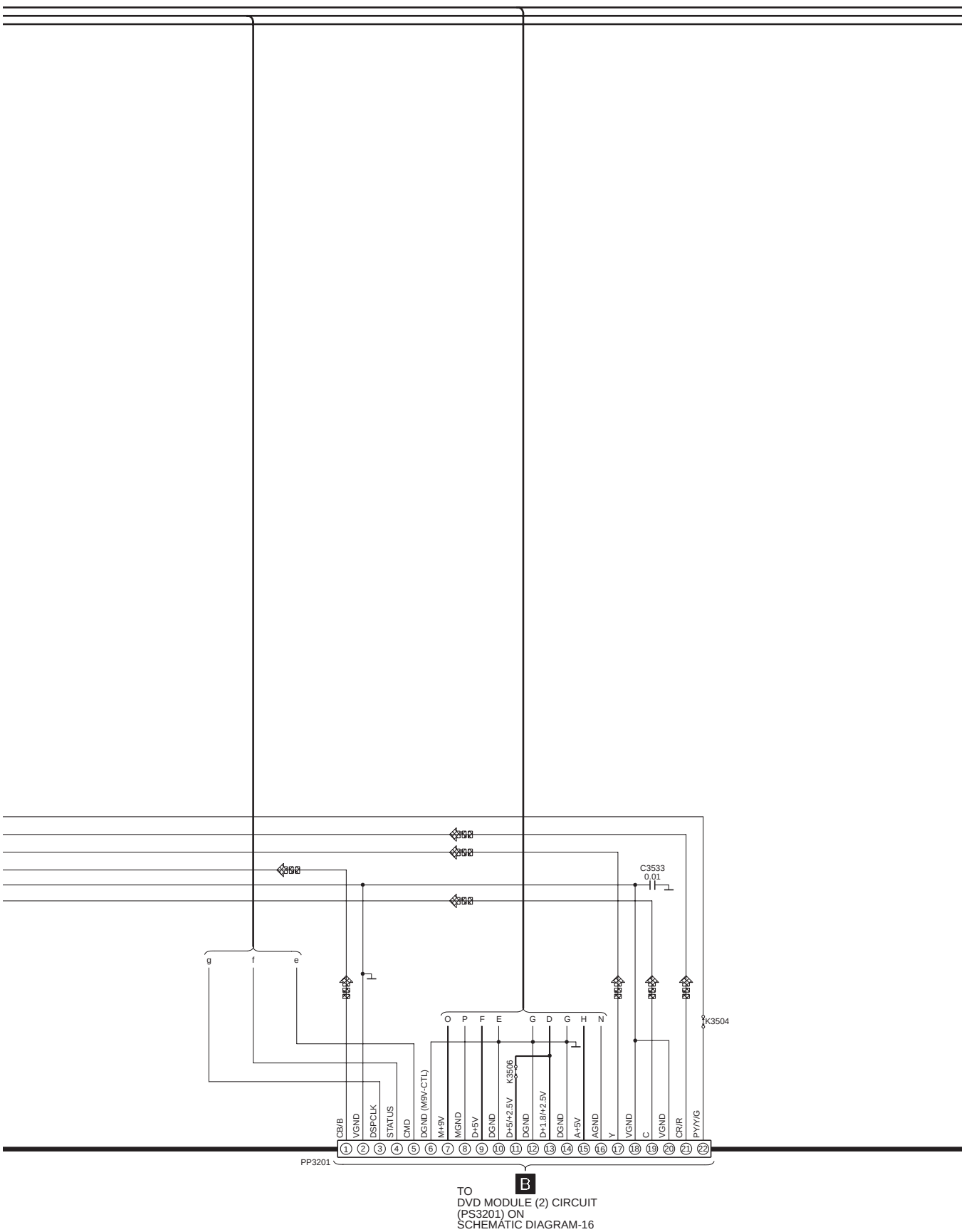


TO
PANEL CIRCUIT
(CN6401) ON
SCHEMATIC DIAGRAM-23

SCHEMATIC DIAGRAM-20

C MAIN CIRCUIT

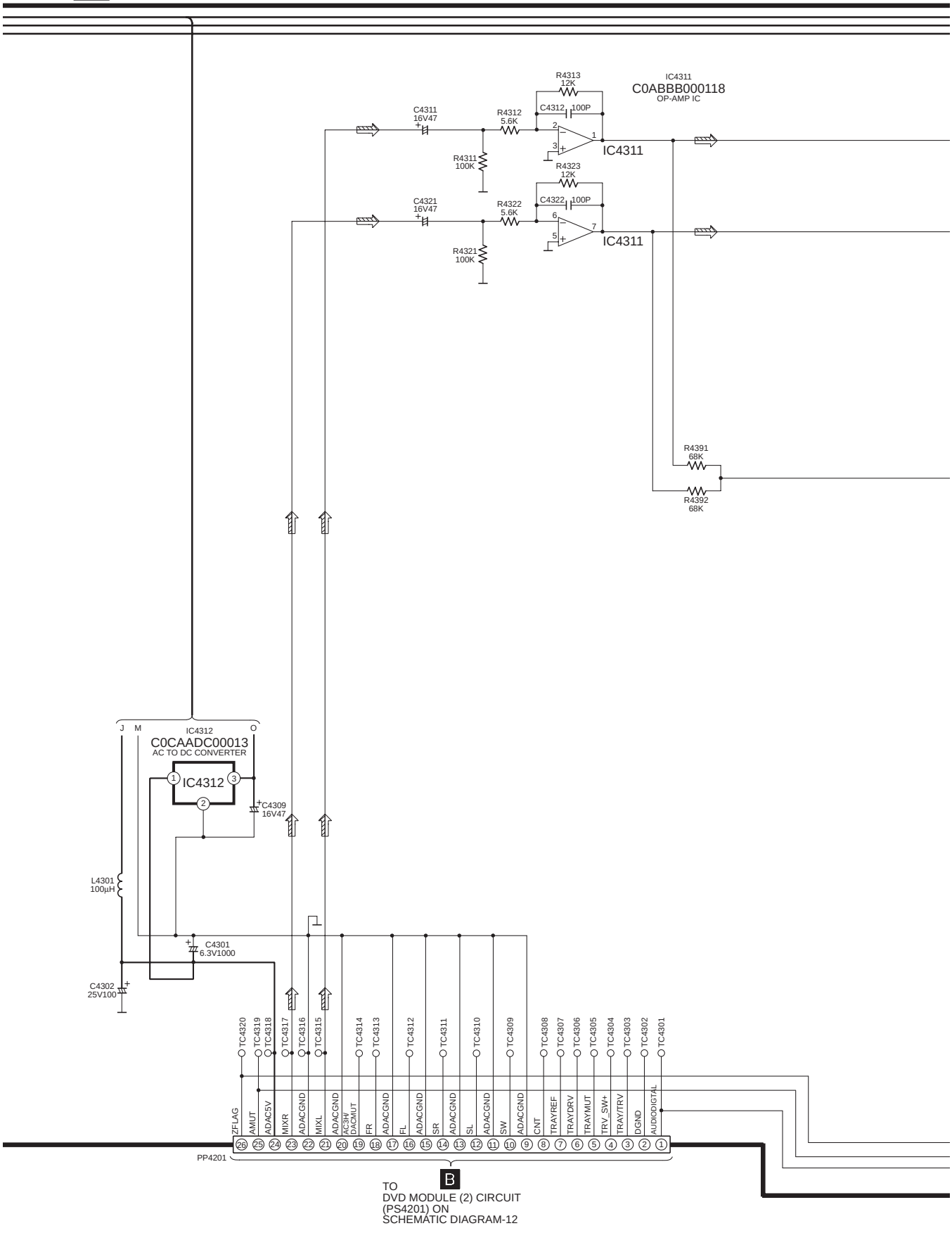
——— : +B SIGNAL LINE ⇒ : DVD VIDEO SIGNAL LINE



SCHEMATIC DIAGRAM-21

C MAIN CIRCUIT

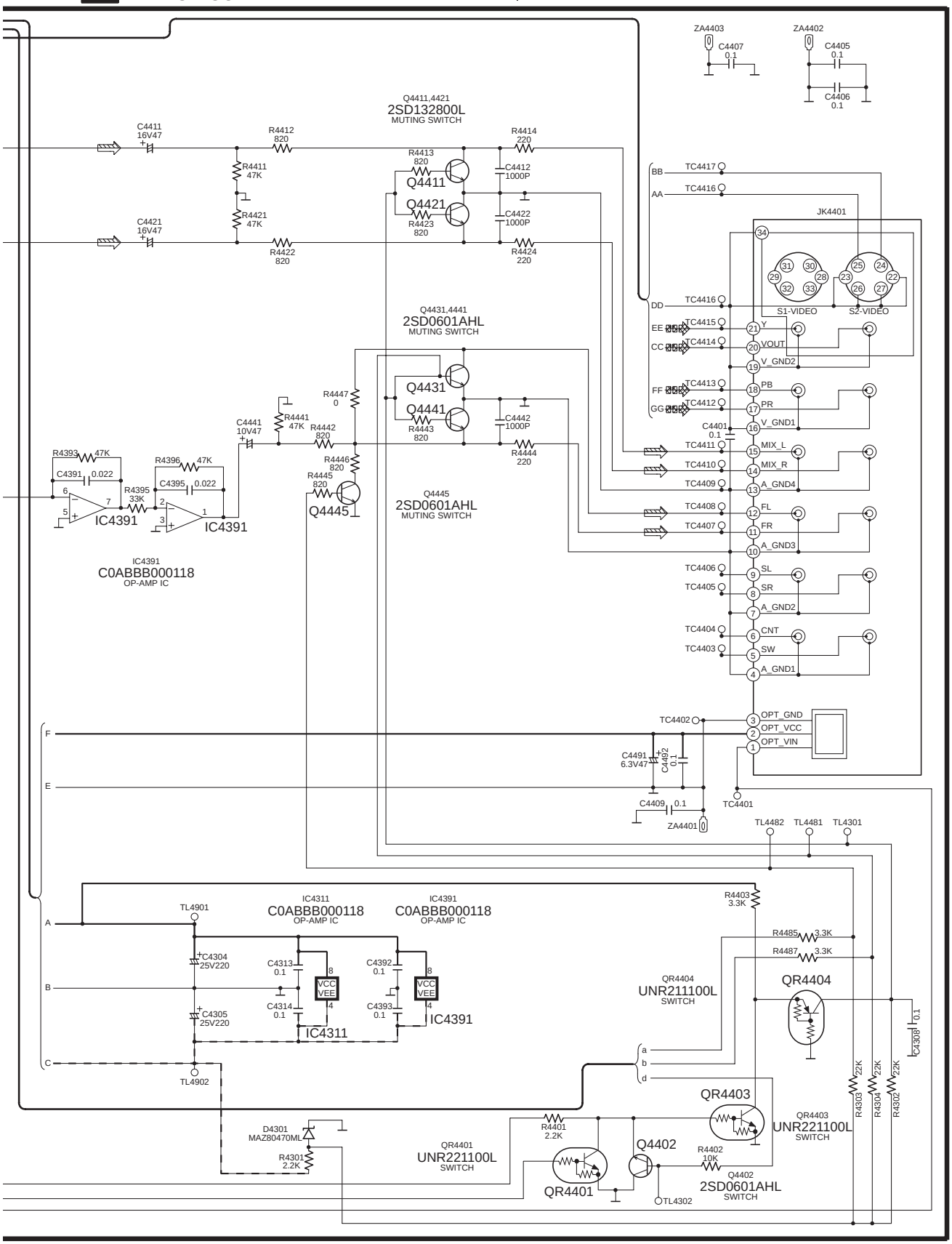
——— : +B SIGNAL LINE ⇒ : MAIN SIGNAL LINE



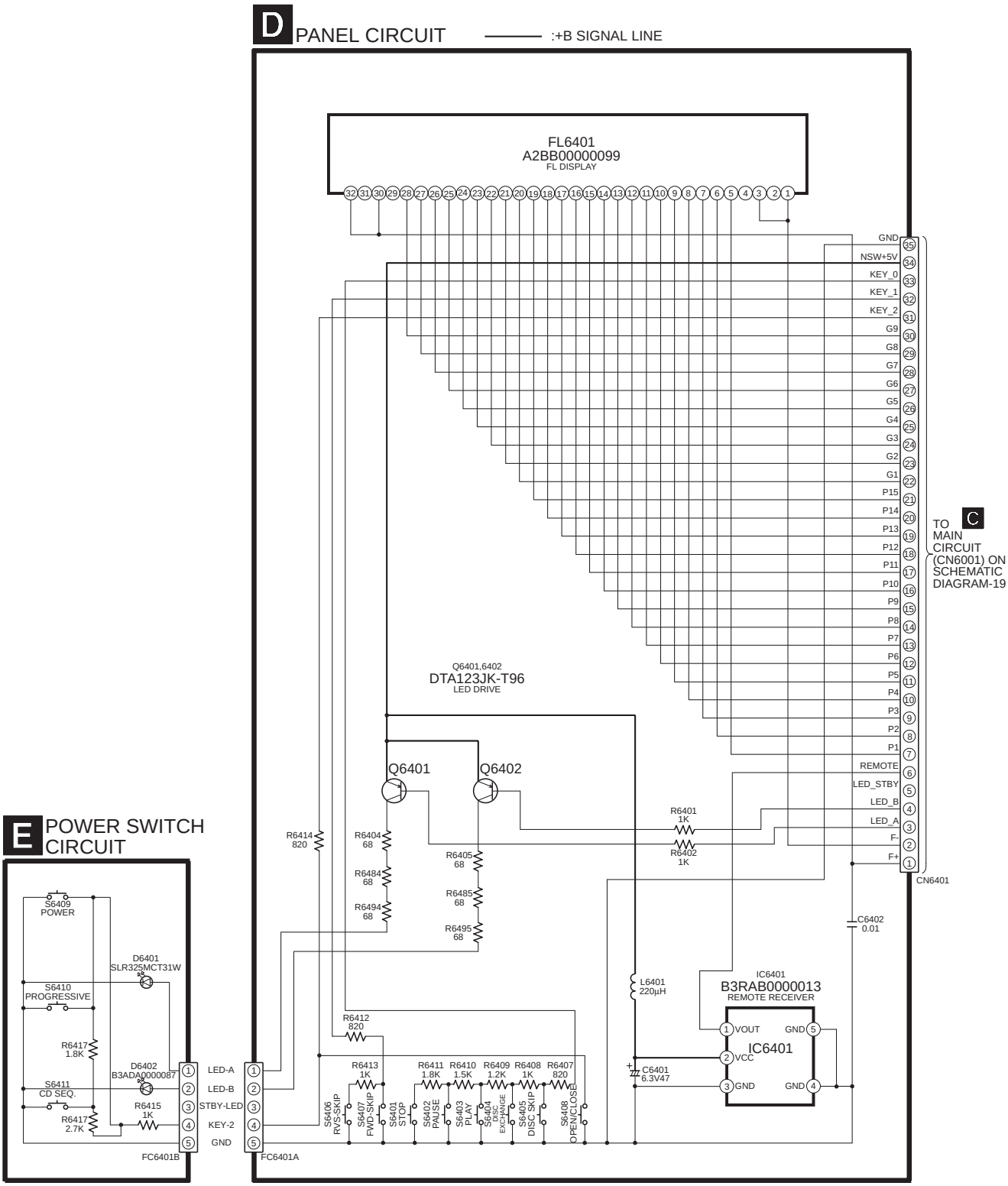
SCHEMATIC DIAGRAM-22

C MAIN CIRCUIT

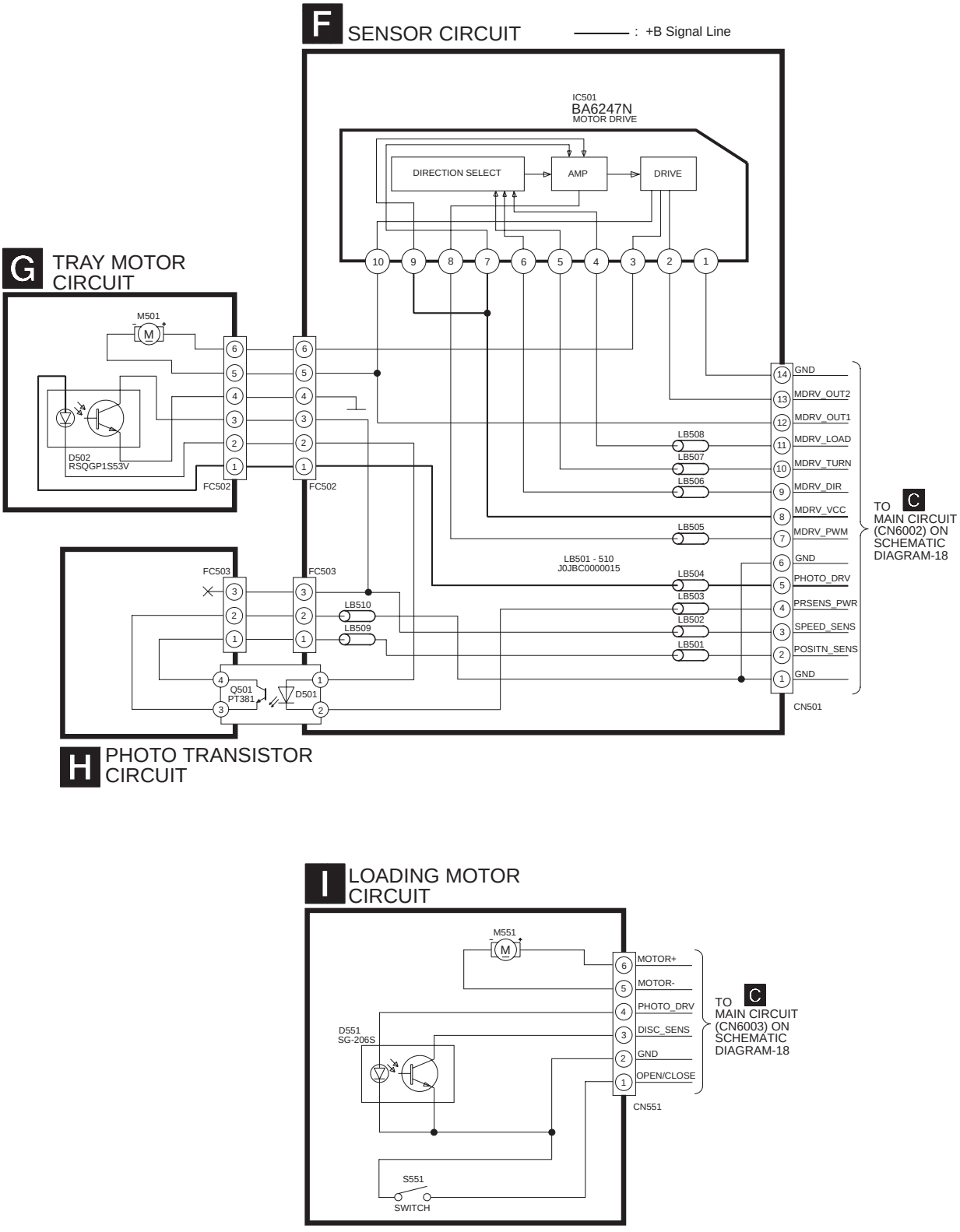
– – – : -B SIGNAL LINE
——— : +B SIGNAL LINE
: DVD VIDEO SIGNAL LINE
: MAIN SIGNAL LINE



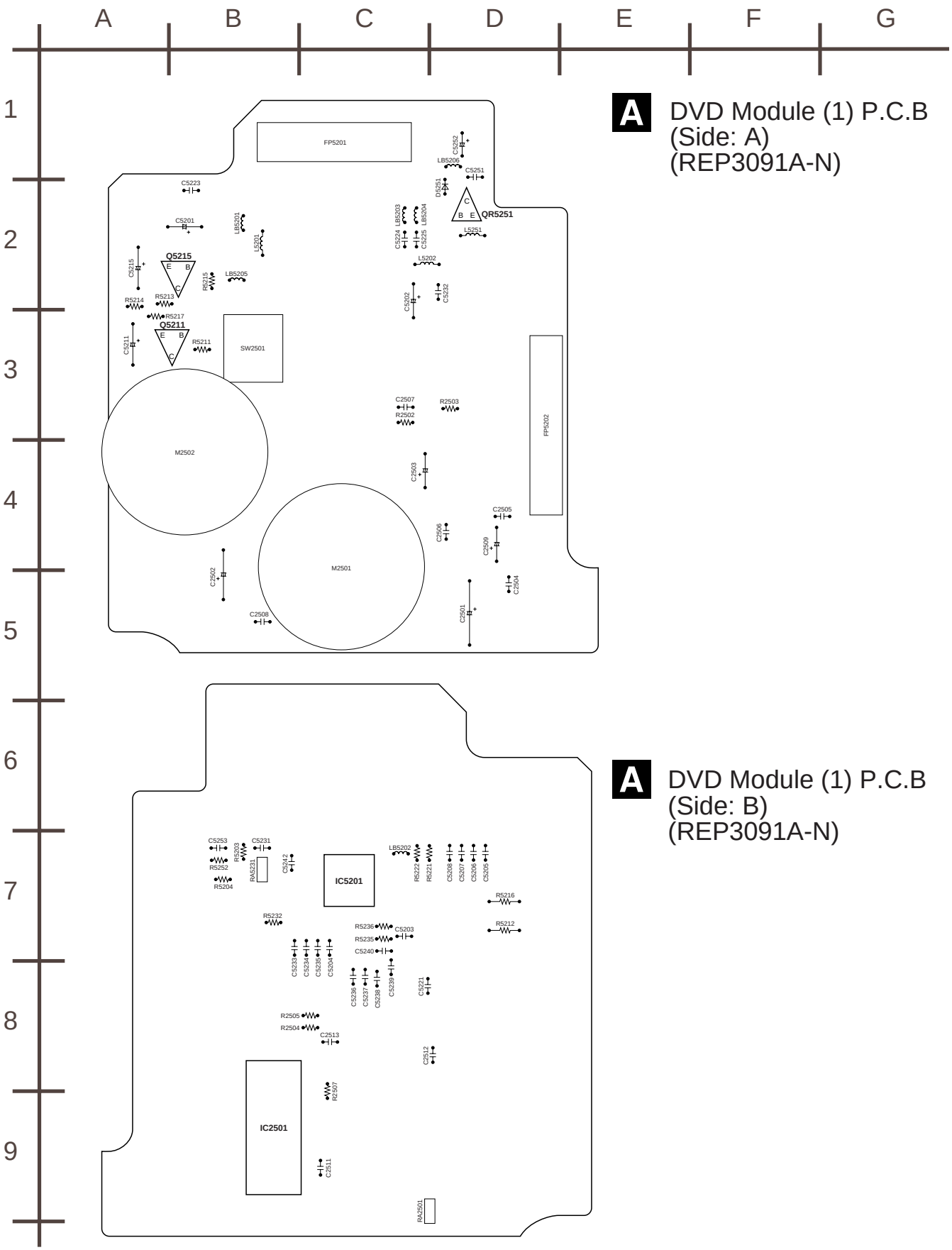
SCHEMATIC DIAGRAM-23



SCHEMATIC DIAGRAM-24



17 Printed Circuit Board



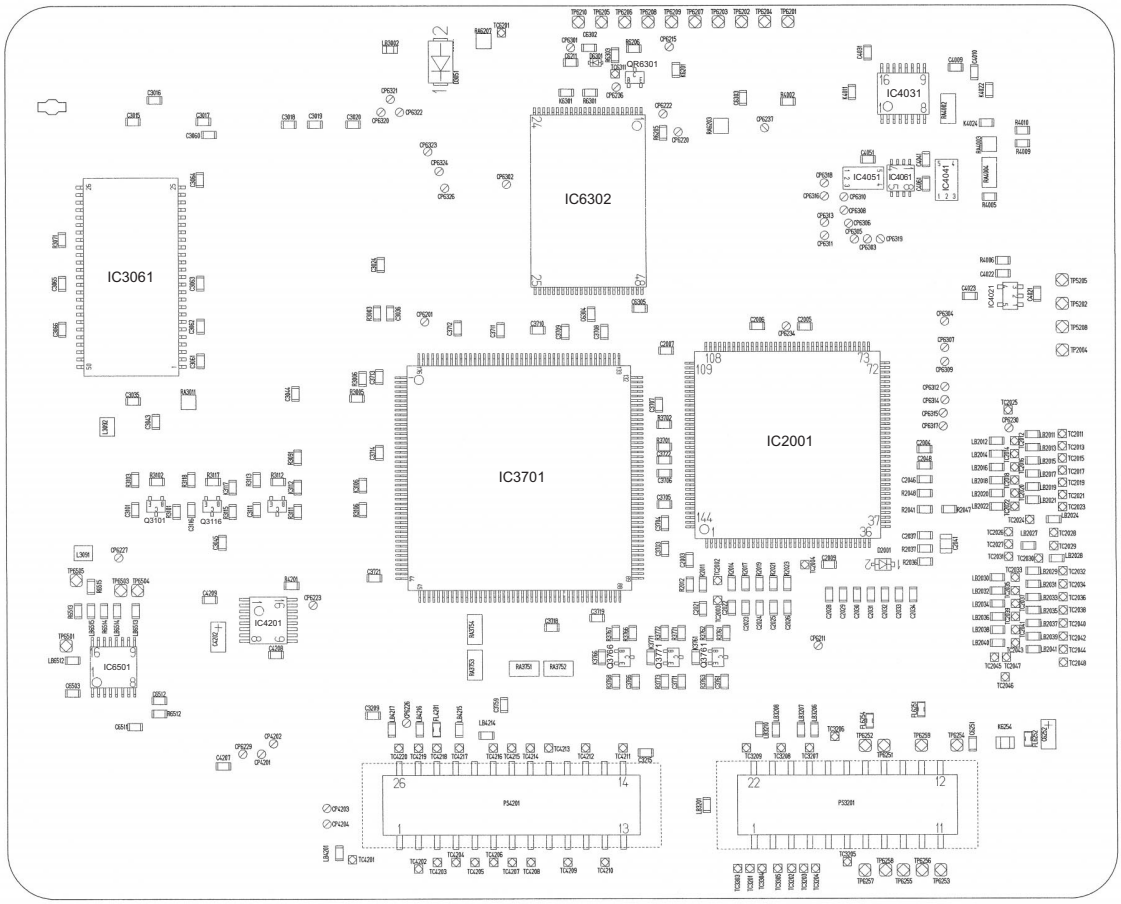
A DVD Module (1) P.C.B
(Side: A)
(REP3091A-N)

A DVD Module (1) P.C.B
(Side: B)
(REP3091A-N)

A B C D E F G

1 2 3 4 5 6 7 8 9

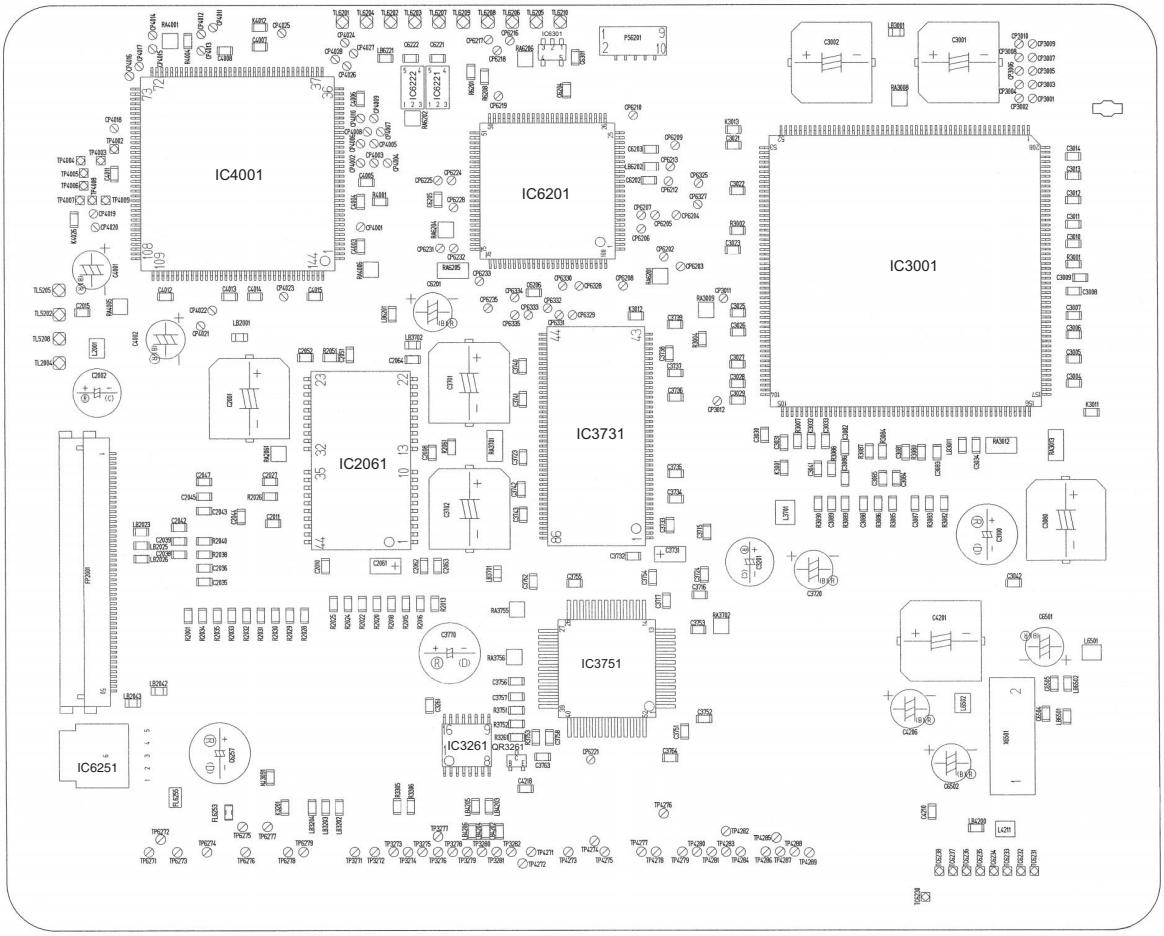
B DVD MODULE (2) (SIDE: A) P.C.B. (REP3385C)



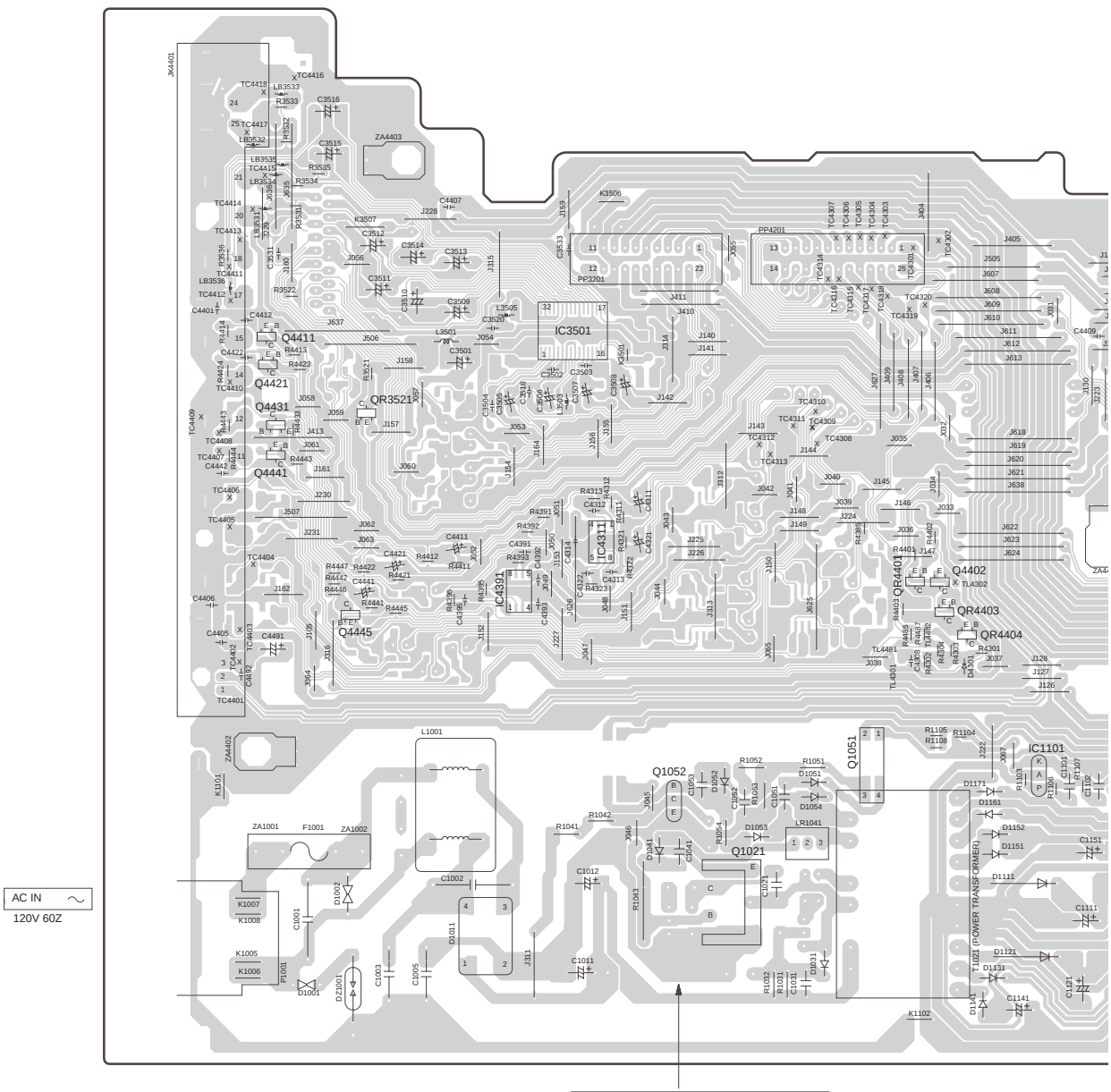
A B C D E F G

1 2 3 4 5 6 7 8 9

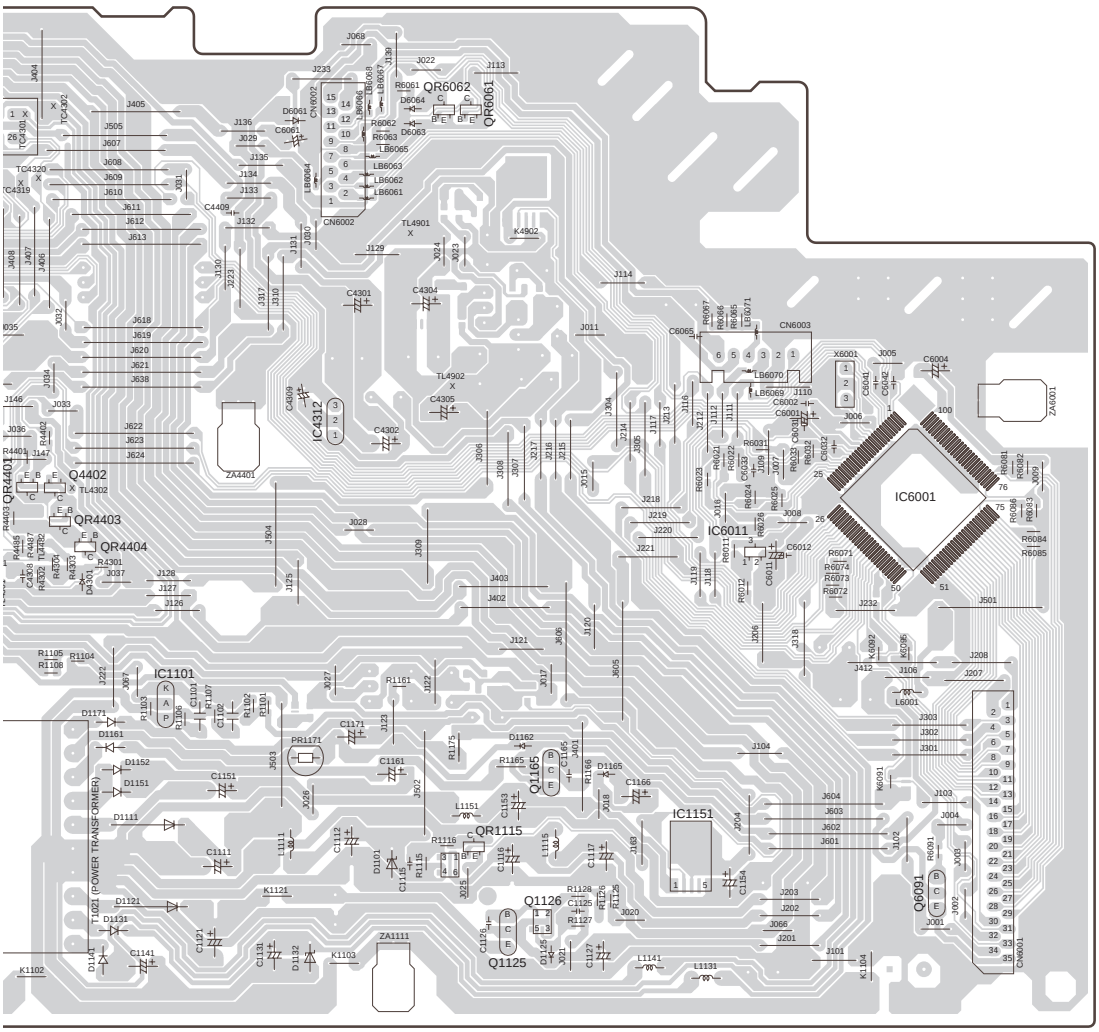
B DVD MODULE (2) (SIDE: B) P.C.B. (REP3385C)



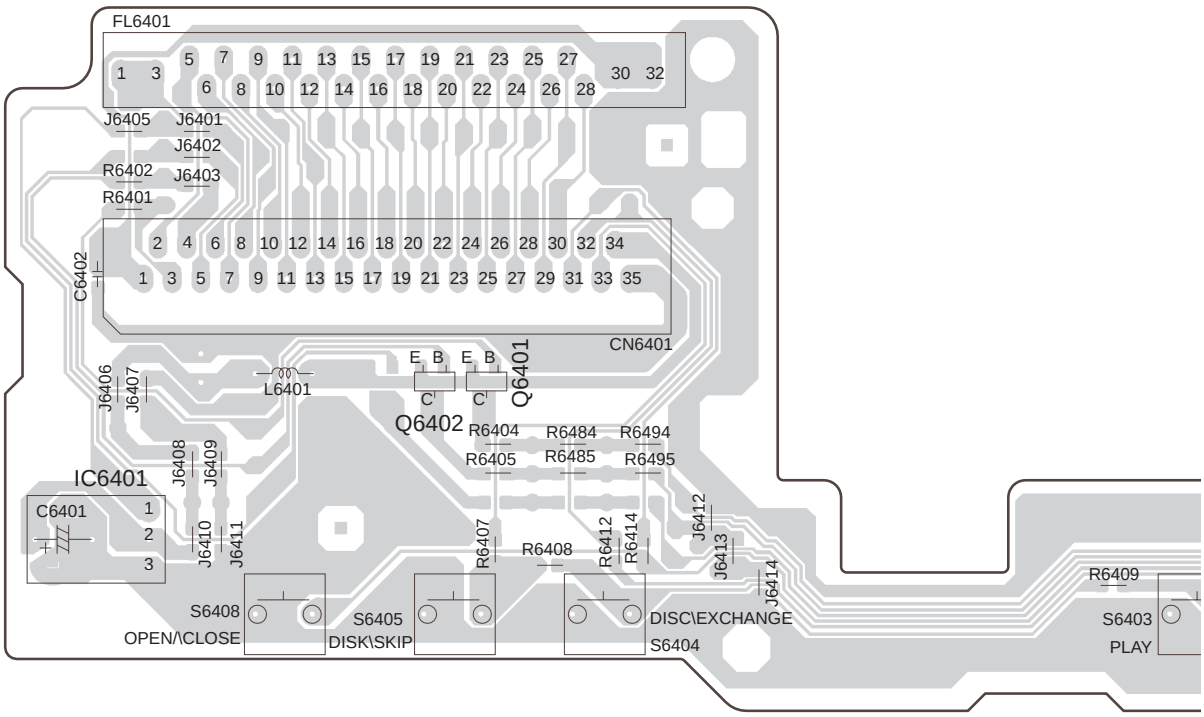
C MAIN P.C.B. (REP3319G)



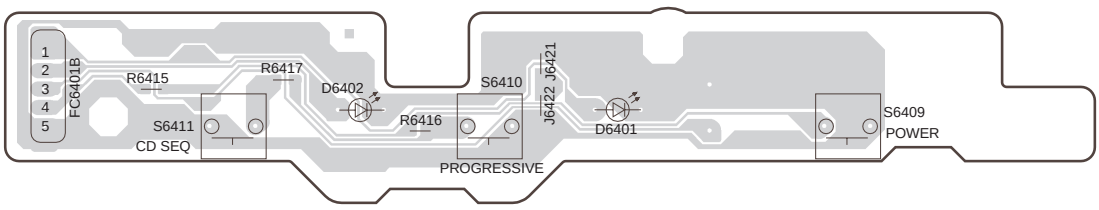
G H I J K L M

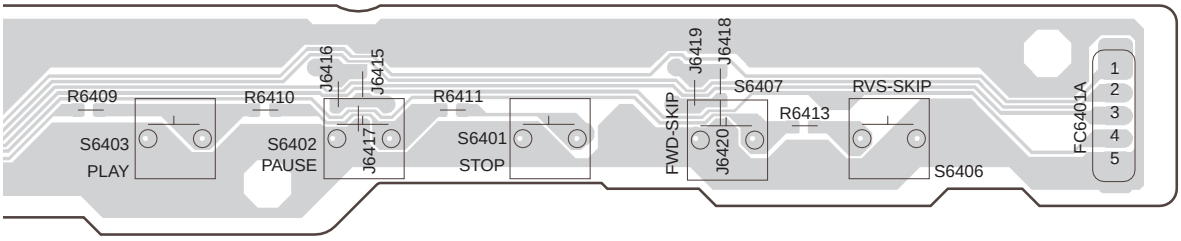

IC6001
IC6011
IC1101
IC1151
IC4312
Q4402
QR4403
QR4404
QR4401
QR6062
QR6061
QR1115
Q1126
Q1125
Q1165
Q6091
CN6002
CN6003
CN6001
TL4901
TL4902
TL4302
ZA4401
ZA1111
ZA6001
K4902
K1102
K1103
K1121
K1141
K6092
K6095
K1604
L6001
L1141
L1131
TC4320
TC4302
D1021 (POWER TRANSFORMER)

D PANEL P.C.B. (REP3320C)



E POWER SWITCH P.C.B. (REP3320C)




R6409
R6410
J6416
J6415
R6411
J6419
J6418
S6407
RVS-SKIP
S6403
PLAY
S6402
PAUSE
J6417
S6401
STOP
FWD-SKIP
J6420
R6413
S6406
FC6401A
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A B C D E F G

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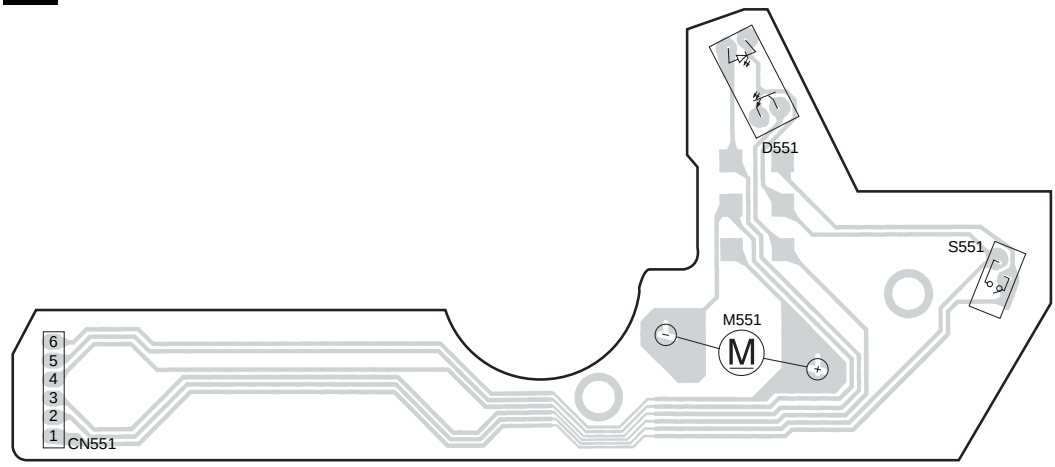
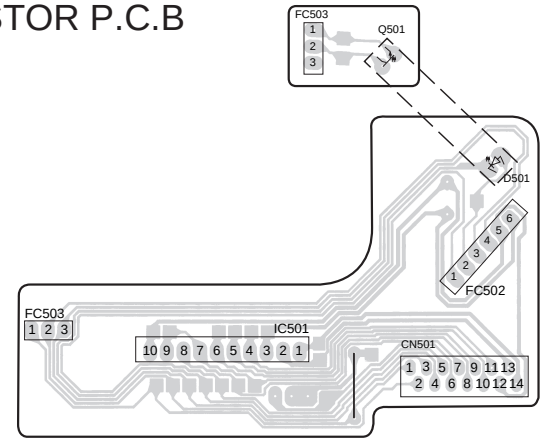
I LOADING MOTOR (REPX0095A-N)

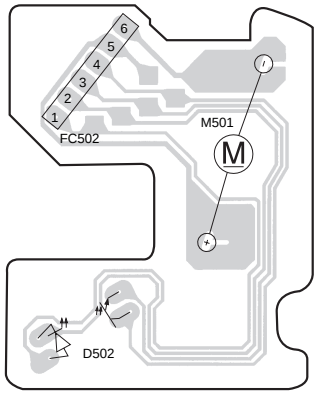


H PHOTO TRANSISTOR P.C.B (REPX0096B-N)

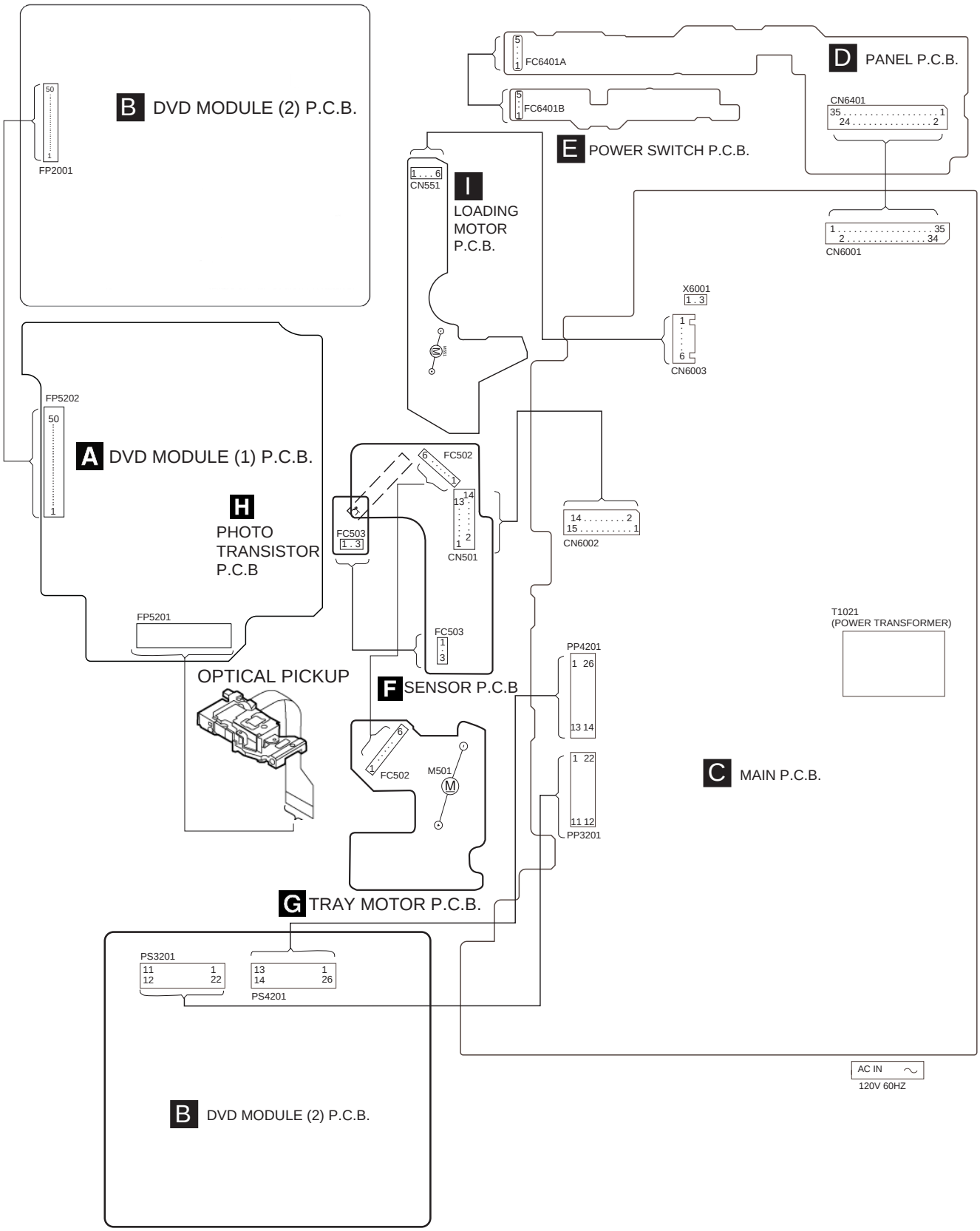
F SENSOR P.C.B (REPX0096B-N)



G TRAY MOTOR P.C.B (REPX0096B-N)



18 Wiring Connection Diagram



19 Parts Location and Replacement Parts List

Notes:

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.

  Furthermore, special parts which have purposes of fire-retardent (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.

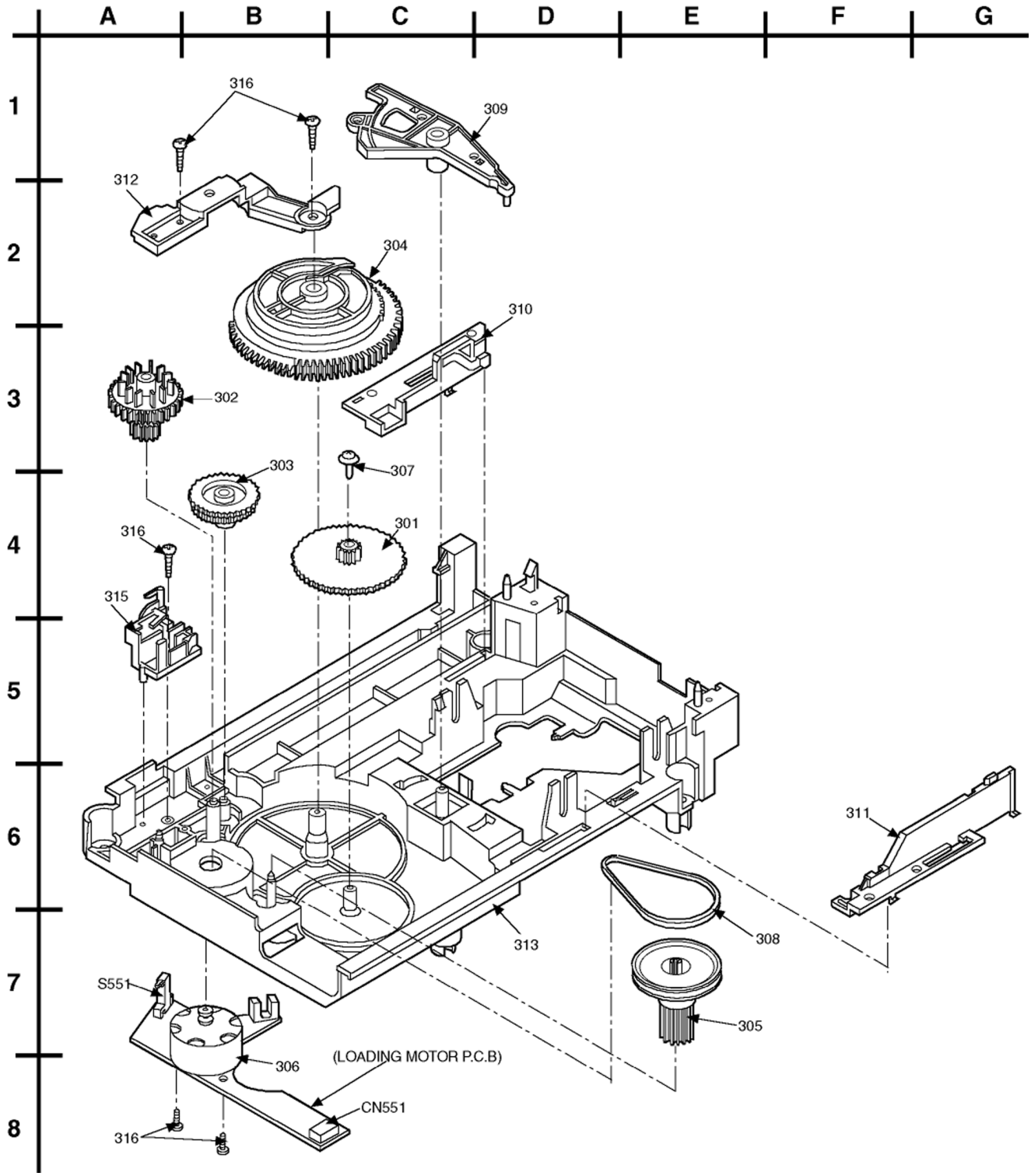
  When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.
- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)

  Parts without these indications can be used for all areas.
- Warning: This product uses a laser diode. Refer to caution statements on "Precaution of Laser Diode".
- Capacitor values are in microfarads (μF) unless specified otherwise, P= Pico-farads (pF), F= Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).
- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availabilityis dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
- [M] Indicates in the Remarks columns indicates parts supplied by **MESA.**
- The "(SF)" mark denotes the standard part.
- Reference for O/I book languages are as follows:

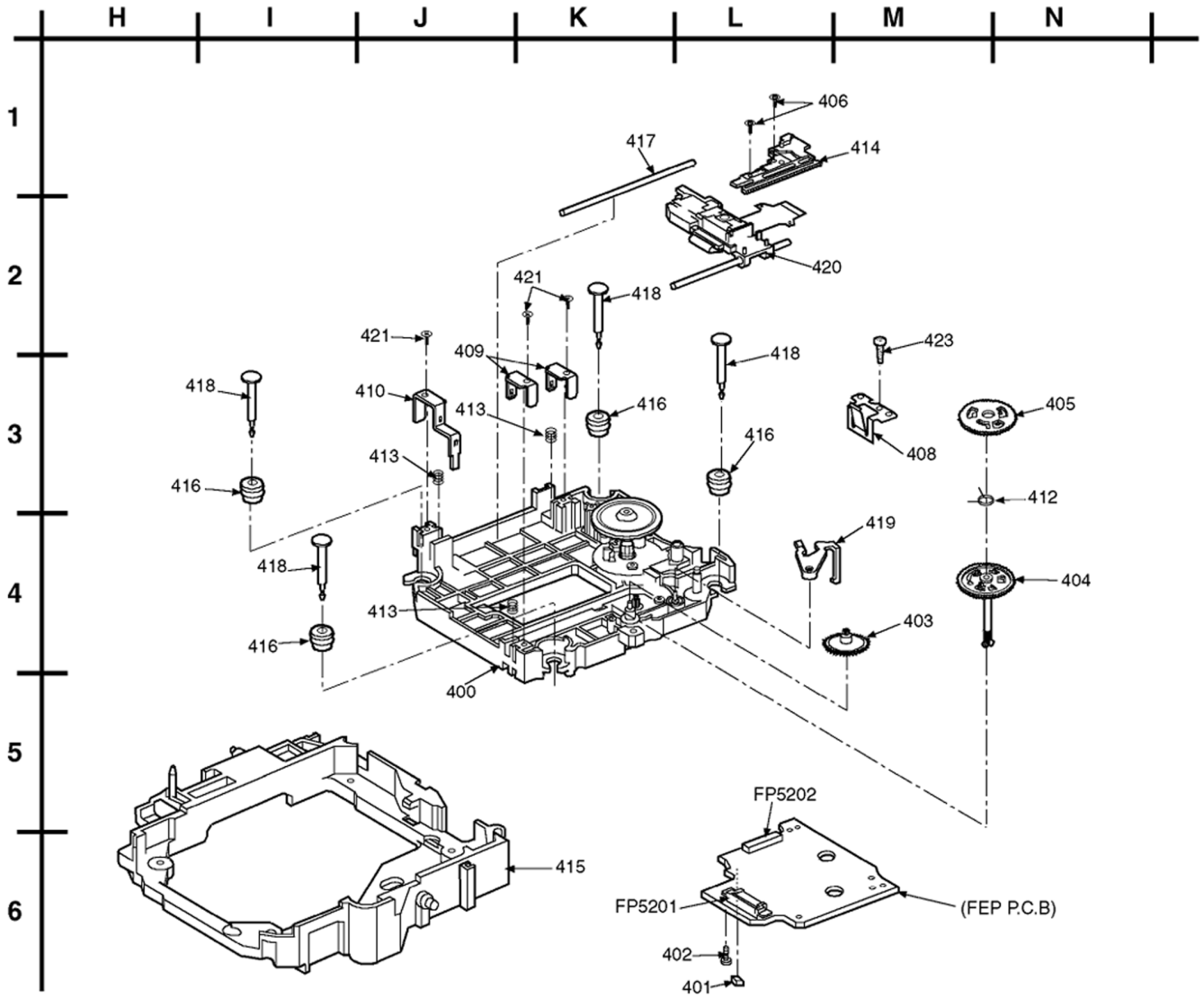
Ar :	Arabic	Du :	Dutch	It :	Italian	Sp :	Spanish
Cf :	Canadian French	En :	English	Ko :	Korean	Sw :	Swedish
Cz :	Czech	Fr :	French	Po :	Polish	Co :	Traditional Chinese
Da :	Danish	Ge :	German	Ru :	Russian	Cn :	Simplified Chinese

19.1. Loading Mechanism and Traverse Unit

19.1.1. Loading Mechanism Parts Location



19.1.2. Traverse Parts Location



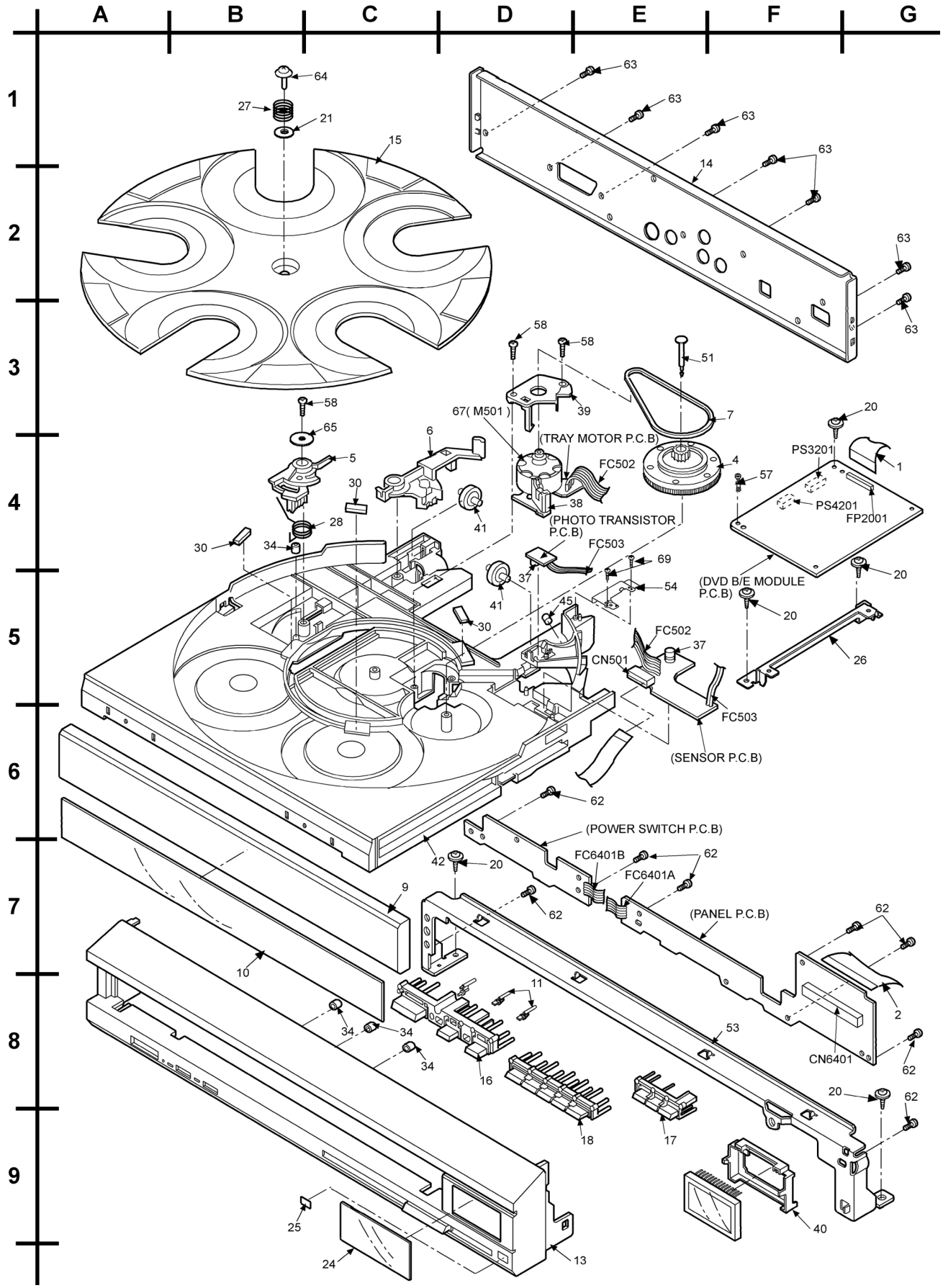
19.1.3. Loading Mechanism and Traverse Parts List

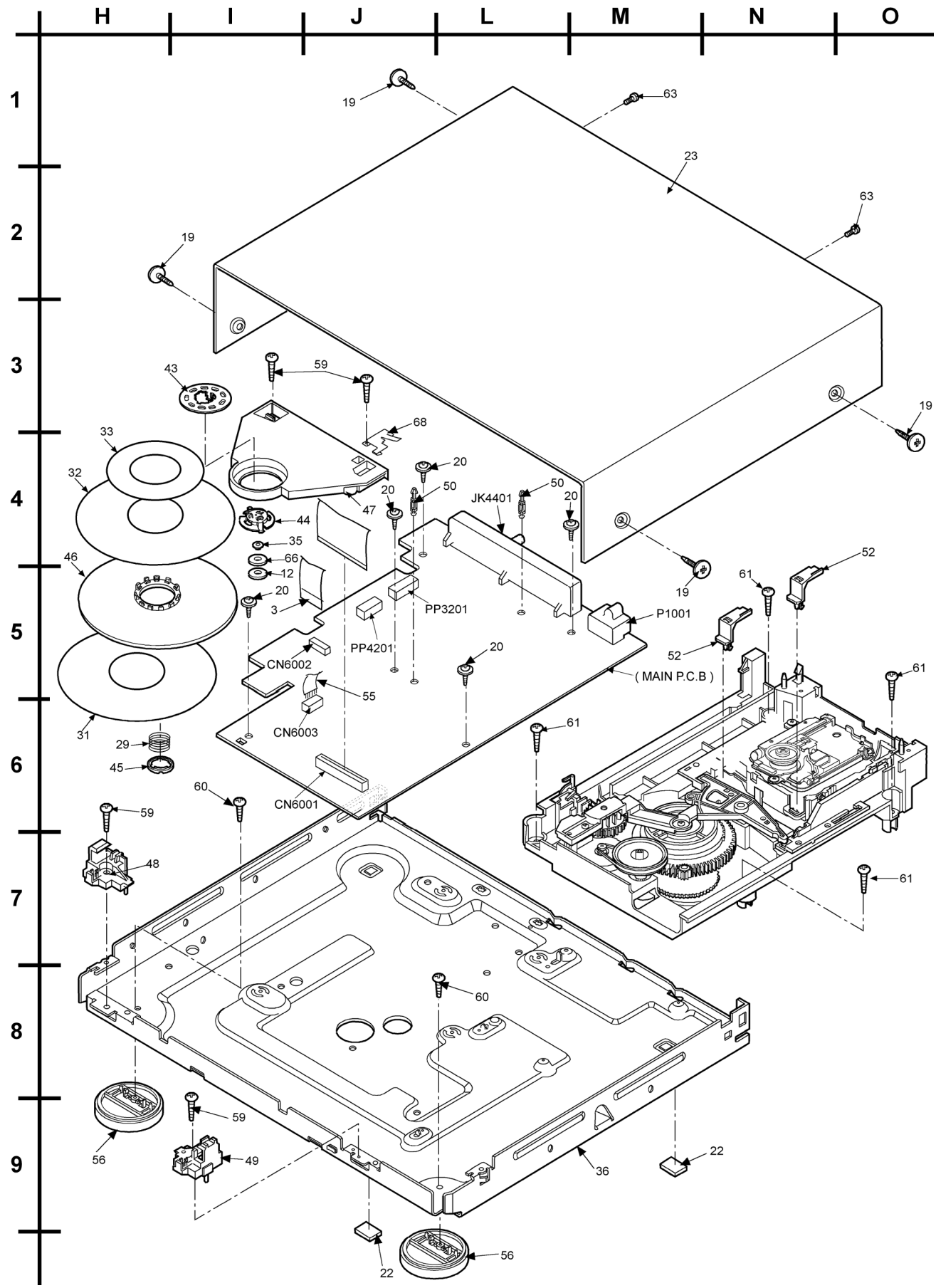
Ref. No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
301	RDG0270	SPEED REDUCTION GEAR	[M]
302	RDG0271	DRIVE GEAR A	[M]
303	RDG0272	DRIVE GEAR B	[M]
304	RDK0025	DRIVE CAM	[M]
305	RDP0050	PULLEY GEAR	[M]
306	RFKPLPD667PB	LOADING MOTOR ASS'Y	[M]
307	RHD26019	SCREW	[M]
308	RMG0268-K	BELT	[M]
309	RML0334	CHANGE LEVER	[M]
310	RMM0117	SLIDE PLATE 1	[M]
311	RMM0118-1	SLIDE PLATE 2	[M]
312	RMR0746-W	STRENGTHENING PLATE	[M]
313	RFKNDCV51CAK	MECHA BASE ASS'Y	[M]
315	RXQ0346-1	SLIDER ASSY	[M]
316	XTB3+10JFZ	SCREW	[M]
400	RXQ0749B	SPINDLE MOTOR ASS'Y (TRV BASE UNIT)	
401	RMG0558-K	P.C.B. RUBBER	[M]
402	RHD20060	PCB SCREW	[M]
403	RDG0499	TRAVERSE GEAR A	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
404	RDG0500	TRAVERSE GEAR B	[M]
405	RDG0501	TRAVERSE GEAR C	[M]
406	RHD17036	DRIVE RACK SCREW	[M]
408	RMC0387	SUPPORT SPRING	[M]
409	RMC0415	ADJUST SPRING HOLDER	[M]
410	RMC0416	ADJUST SPRING HOLDER	[M]
412	RME0319	TRAVERSE GEAR SPRING	[M]
413	RME0320	ADJUSTMENT SPRING	[M]
414	RMM0234-1	TRAVERSE DRIVE RACK	[M]
415	RMR1356-K	UNIT CHASSIS	[M]
416	RMG0545-A	FLOATING RUBBER	[M]
417	RMS0711	GUIDE SHAFT	[M]
418	RMS0712-1	FIXED PIN	[M]
419	RMX0192	INNER STOPPER	[M]
420	RXQ0810	OPU UNIT	[M]
421	VHD1224	ADJ SPRING HOLDER SC	[M]
423	XTV2+6G	PCB SCREW	[M]

19.2. Cabinet

19.2.1. Cabinet Parts Location

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JK4401
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PP3201
P1001
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61
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PP4201
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CN6002
(MAIN P.C.B)
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CN6003
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31
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CN6001
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19.2.2. Cabinet Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	REZ1440	50P FFC (TRV-B/E)	[M]
2	REZ1441	35P FFC (PANEL-MAIN)	[M]
3	REZ1442	14P FFC (TRAY-MAIN)	[M]
4	RDG0267	TRAY REDUCTION GEAR	[M]
5	RDG0268-1	CLOSE LOCK GEAR	[M]
6	RDG0269-3	OPEN LOCK GEAR	[M]
7	RDV0031	BELT	[M]
9	RGK1497-K	TRAY ORNAMENT	[M]K
9	RGK1497-S	TRAY ORNAMENT	[M]S
10	RGK1498G-Q	TRAY SHEET	[M]S
10	RGK1498H-Q	TRAY SHEET	[M]K
11	RGL0585-Q	PANEL LIGHT	[M]
12	JSM0048	MAGNET	[M]
13	RGP0917D-K	FRONT PANEL	[M]K
13	RGP0917D-S	FRONT PANEL	[M]S
14	RGR0325C-F	REAR PANEL	[M]
15	RGT0019-2	ROTARY TRAY	[M]
16	RGU2082-K	POWER BUTTON	[M]K
16	RGU2082-S	POWER BUTTON	[M]S
17	RGU2083-K	DISC EXCHANGE BUTTON	[M]K
17	RGU2083-S	DISC EXCHANGE BUTTON	[M]S
18	RGU2084-K	PLAY BUTTON	[M]K
18	RGU2084-S	PLAY BUTTON	[M]S
19	RHD30007-K1	SCREW	[M]K
19	RHD30007-S	SCREW	[M]S
20	RHD30090	SCREW	[M]
21	RHW81001-1	WASHER	[M]
22	RKA0105-KJ	CUSHION	[M]
23	RKM0462-K1	TOP CABINET	[M]K
23	RKM0462-S1	TOP CABINET	[M]S
24	RKW0681A-Q	FL WINDOW	[M]K
24	RKW0681-Q	FL WINDOW	[M]S
25	RKW0682-K	SENSOR WINDOW	[M]K
25	RKW0682-S	SENSOR WINDOW	[M]S
26	RMA1535	MOD PCB BRACKET	[M]
27	RMB0365	TRAY SPRING	[M]
28	RME0152-3	LOCK GEAR SPRING	[M]
29	RME0318-1	CLAMP SPRING	[M]
30	RMF0182	TRAY FELT	[M]
31	RMF0290	CLAMPER SHEET	[M]
32	RMF0295	UPPER SHEET	[M]
33	RMF0296	INNER SHEET	[M]
34	RMG0200	SHUTTER RUBBER	[M]
35	RMG0546-A	CLAMP RUBBER	[M]
36	RMK0520	BTM CHASSIS	[M]
37	RMN0254-1	LED HOLDER	[M]
38	RMN0255-2	SENSOR HOLDER	[M]
39	RMN0263	MOTOR HOLDER	[M]
40	RMN0695	FL HOLDER	[M]
41	RMR0546-W2	ROLLER	[M]
42	RMR0745D-K2	SL4 DVD TRAY BASE	[M]
43	RMR1318-X	SPRING HOOK	[M]
44	RMR1319-X	MAGNET HOLDER	[M]
45	RMR1321-X	SPRING HOLDER	[M]
46	RMR1322-K	CLAMPER	[M]
47	RMR1425-X	SLIM CLAMP PLATE	[M]
48	RMR1438-K	TRAY BASE GUIDE (L)	[M]
49	RMR1439-K	TRAY BASE GUIDE (R)	[M]
50	RMR1440-X	PCB SUPPORT	[M]
51	RMS0123-1	FIXED PIN B	[M]
52	RMX0193	TRAY GUIDE	[M]
53	RSC0628	SHIELD PLATE	[M]
54	RSC0651	TRAY SHIELD PLATE	[M]
55	RWJ1806120XX	6P WIRE (MECHA-MAIN)	[M]
56	RYQ0349-N	FOOT	[M]
57	SHR415	PLASTIC RIVET	[M]
58	XTB3+10G	SCREW	[M]
59	XTB3+10JFZ	SCREW	[M]
60	XTB3+6J	SCREW	[M]
61	XTB3+8JFZ	SCREW	[M]
62	XTBS26+10J	SCREW	[M]
63	XTBS3+8JFZ1	SCREW	[M]
64	XTWS3+10S	SCREW	[M]
65	XWE3D13	WASHER	[M]
66	XWG6FFY	WASHER	[M]
67	RFKPLPD667PA	TRAY MOTOR ASS'Y	[M]
68	RMC0496	TRAY EARTH PLATE	[M]
69	XTV2+6G	PCB SCREW	[M]

19.3. Component Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REP3091A-N	DVD MODULE (1) (SIDE A) P.C.B.	[M](RTL)
	REP3091A-N	DVD MODULE (1)(SIDE B) ⚠ P.C.B.	[M](RTL)
	REP3385C	DVD MODULE (2) (SIDE A) P.C.B.	[M](RTL)
	REP3385C	DVD MODULE (2) (SIDE B) P.C.B.	[M](RTL)
	REP3319G	MAIN P.C.B.	[M](RTL)
	REP3320C	PANEL P.C.B.	[M](RTL)
	REP3320C	POWER SWITCH P.C.B.	[M](RTL)
	REPX0095A-N	LOADING MOTOR P.C.B.	[M](RTL)
	REPX0096B-N	PHOTO TRANSISTOR P.C.B.	[M](RTL)
	REPX0096B-N	SENSOR P.C.B.	[M](RTL)
	REPX0096B-N	TRAY MOTOR P.C.B.	[M](RTL)
		INTEGRATED CIRCUITS	
IC501	BA6247N	IC	[M]
IC1101	C0DAEMZ00001	IC	[M] ⚠
IC1151	C0CBCHG00003	IC	[M] ⚠
IC2001	MN677203NP1	IC NODC	[M]
IC2061	C3ABKG000057	IC 4M DRAM	[M]
IC2501	C0GBG0000033	IC PRIVER	[M]
IC3001	MN677533MP	IC	[M]
IC3061	C3ABMG000103	IC 16M SDRAM	[M]
IC3261	C0JBAR000290	IC VIDEO SELECTOR	[M]
IC3501	C9ZB00000377	IC	[M]
IC3701	C1AB00001554	IC PROGRESSIVE	[M]
IC3731	C3ABPJ000017	IC	[M]
IC3751	C1AB00001499	IC PROGRESSIVE DAC	[M]
IC4001	C2HBZG000005	IC WMA LSI	[M]
IC4021	C0CBCAC00025	IC VOLTAGE REGULATOR	[M] ⚠
IC4031	C0JBAR000294	IC SELECTOR MULTIPLI	[M]
IC4041	C0JBAA000260	IC AND GATE	[M]
IC4051	C0JBAA000260	IC AND GATE	[M]
IC4061	C0JBAF000367	IC D FLIP-FLOP GATE	[M]
IC4201	C0FBBK000030	IC 2 CH D/A CONVETER	[M]
IC4311	C0ABBB000118	IC	[M]
IC4312	C0CAADC00013	IC	[M]
IC4391	C0ABBB000118	IC	[M]
IC5201	AN8708FHK	IC	[M]
IC6001	MN101C35DCN	IC MICON	[M]
IC6011	C0EBE0000106	IC	[M]
IC6201	MN102H60GFC	IC CPU	[M]
IC6221	C0JBAA000001	IC	[M]
IC6222	C0JBAA000001	IC	[M]
IC6251	C0DBCGE00002	IC REGULATOR	[M] ⚠
IC6301	C0EBE0000070	IC	[M]
IC6302	RFKFCP62J080	IC 8M FLASH ROM	[SPC]
IC6401	B3RAB0000013	IC REMOTE RECEIVER	[M]
IC6501	C1DB00000582	IC	[M]
		TRANSISTORS	
Q501	PT381	TRANSISTOR	[M]
Q1021	2SC4662LF654	TRANSISTOR	[M]
Q1051	B3PBA0000076	TRANSISTOR	[M]
Q1052	2SD19960SA	TRANSISTOR	[M] ⚠
Q1115	B1DHCC000029	TRANSISTOR	[M] ⚠
Q1125	2SB14170QA	TRANSISTOR	[M]
Q1126	XN0150100L	TRANSISTOR	[M] ⚠
Q1165	2SA1309ARA	TRANSISTOR	[M] ⚠
Q3101	2SB1218ARL	TRANSISTOR	[M]
Q3111	2SB1218ARL	TRANSISTOR	[M]
Q3116	2SB1218ARL	TRANSISTOR	[M]
Q3761	2SA15320XL	TRANSISTOR	[M]
Q3766	2SA15320XL	TRANSISTOR	[M]
Q3771	2SA15320XL	TRANSISTOR	[M]
Q4402	2SD0601AHL	TRANSISTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
Q4411	2SD132800L	TRANSISTOR	[M]
Q4421	2SD132800L	TRANSISTOR	[M]
Q4431	2SD0601AHL	TRANSISTOR	[M]
Q4441	2SD0601AHL	TRANSISTOR	[M]
Q4445	2SD0601AHL	TRANSISTOR	[M]
Q5211	B1BDBF000004	TRANSISTOR	[M]
Q5215	B1BDBF000004	TRANSISTOR	[M]
Q6091	2SD1996-STA	TRANSISTOR	[M]
Q6401	DTA123JK-T96	TRANSISTOR	[M]
Q6402	DTA123JK-T96	TRANSISTOR	[M]
QR1115	UNR221300L	TRANSISTOR	[M]
QR3261	UN5212TX	TRANSISTOR	[M]
QR3521	UNR221200L	TRANSISTOR	[M]
QR4401	UNR221100L	TRANSISTOR	[M]
QR4403	UNR221100L	TRANSISTOR	[M]
QR4404	UNR211100L	TRANSISTOR	[M]
QR5251	UNR212100L	TRANSISTOR	[M]
QR6061	UNR22150RL	TRANSISTOR	[M]
QR6062	UNR22150RL	TRANSISTOR	[M]
QR6301	UN5212TX	TRANSISTOR	[M]
		DIODES	
D501	B3EA00000014	DIODE	[M]
D502	RSQGP1S53V	DIODE	[M]
D551	SG-206S	DIODE	[M]
D1001	ERZVA5D471	DIODE	[M] ⚠
D1002	D4EA7361A002	DIODE	[M] ⚠
D1011	B0EBKT000002	DIODE	[M] ⚠
D1031	VSD0002-T1	DIODE	[M]
D1041	B0HAGM000006	DIODE	[M]
D1051	B0AACK000004	DIODE	[M]
D1052	B0AACK000004	DIODE	[M]
D1053	MAZ40360MF	DIODE	[M]
D1054	B0HAGM000006	DIODE	[M]
D1101	MA7075A-TR	DIODE	[M]
D1111	21DQ04FC4	DIODE	[M]
D1121	21DQ04FC4	DIODE	[M]
D1125	MA2J11100L	DIODE	[M]
D1131	B0JAJG000002	DIODE	[M]
D1132	MAZ71500BC	DIODE	[M]
D1141	B0JAJG000002	DIODE	[M]
D1151	B0JAJG000002	DIODE	[M]
D1152	B0JAJG000002	DIODE	[M]
D1161	B0HAGM000006	DIODE	[M]
D1162	MAZ80300HL	DIODE	[M]
D1165	MAZ82400HL	DIODE	[M]
D1171	B0JAME000037	DIODE	[M]
D2001	MA2J11100L	DIODE	[M]
D3051	B0HCMM000001	DIODE	[M]
D4301	MAZ80470ML	DIODE	[M]
D5251	MA2J72800L	DIODE	[M]
D6061	B0JCME000025	DIODE	[M]
D6063	MAZ80680ML	DIODE	[M]
D6064	B0BC5R600003	DIODE	[M]
D6301	MA2SD2400L	DIODE	[M]
D6401	SLR325MCT31W	DIODE	[M]
D6402	B3ADA0000087	DIODE	[M]
DZ1001	VSQ1003-F	DIA SURGE	[M] ⚠
LB501	J0JBC0000015	CHIP INDUCTOR	[M]
LB502	J0JBC0000015	CHIP INDUCTOR	[M]
LB503	J0JBC0000015	CHIP INDUCTOR	[M]
LB504	J0JBC0000015	CHIP INDUCTOR	[M]
LB505	J0JBC0000015	CHIP INDUCTOR	[M]
LB506	J0JBC0000015	CHIP INDUCTOR	[M]
LB507	J0JBC0000015	CHIP INDUCTOR	[M]
LB508	J0JBC0000015	CHIP INDUCTOR	[M]
LB509	J0JBC0000015	CHIP INDUCTOR	[M]
LB510	J0JBC0000015	CHIP INDUCTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
LB2001	J0JHC0000045	CHIP CAPACITOR	[M]
LB2011	VLP0323A601R	CHIP INDUCTOR	[M]
LB2012	VLP0323A601R	CHIP INDUCTOR	[M]
LB2013	VLP0323A601R	CHIP INDUCTOR	[M]
LB2014	VLP0323A601R	CHIP INDUCTOR	[M]
LB2015	VLP0323A601R	CHIP INDUCTOR	[M]
LB2016	VLP0323A601R	CHIP INDUCTOR	[M]
LB2017	VLP0323A601R	CHIP INDUCTOR	[M]
LB2018	VLP0323A601R	CHIP INDUCTOR	[M]
LB2019	VLP0323A601R	CHIP INDUCTOR	[M]
LB2020	VLP0323A601R	CHIP INDUCTOR	[M]
LB2021	VLP0323A601R	CHIP INDUCTOR	[M]
LB2022	VLP0323A601R	CHIP INDUCTOR	[M]
LB2023	VLP0323A601R	CHIP INDUCTOR	[M]
LB2024	VLP0323A601R	CHIP INDUCTOR	[M]
LB2025	VLP0323A601R	CHIP INDUCTOR	[M]
LB2026	VLP0323A601R	CHIP INDUCTOR	[M]
LB2027	VLP0323A601R	CHIP INDUCTOR	[M]
LB2028	VLP0323A601R	CHIP INDUCTOR	[M]
LB2029	VLP0323A601R	CHIP INDUCTOR	[M]
LB2030	ERJ3GEY0R00V	0 1/16W	[M]
LB2031	ERJ3GEY0R00V	0 1/16W	[M]
LB2032	VLP0323A601R	CHIP INDUCTOR	[M]
LB2033	VLP0323A601R	CHIP INDUCTOR	[M]
LB2034	ERJ3GEY0R00V	0 1/16W	[M]
LB2035	ERJ3GEY0R00V	0 1/16W	[M]
LB2036	VLP0323A601R	CHIP INDUCTOR	[M]
LB2037	VLP0323A601R	CHIP INDUCTOR	[M]
LB2038	VLP0323A601R	CHIP INDUCTOR	[M]
LB2039	VLP0323A601R	CHIP INDUCTOR	[M]
LB2040	ERJ3GEY0R00V	0 1/16W	[M]
LB2041	VLP0323A601R	CHIP INDUCTOR	[M]
LB2042	J0JHC0000045	CHIP CAPACITOR	[M]
LB2043	J0JHC0000045	CHIP CAPACITOR	[M]
LB3001	J0JHC0000045	CHIP CAPACITOR	[M]
LB3002	J0JHC0000045	CHIP CAPACITOR	[M]
LB3011	J0JCC0000077	CHIP BEEZ	[M]
LB3201	ERJ3GEY0R00V	0 1/16W	[M]
LB3202	D0GB101JA002	100 1/16W	[M]
LB3203	D0GB101JA002	100 1/16W	[M]
LB3204	D0GB101JA002	100 1/16W	[M]
LB3206	ERJ3GEY0R00V	0 1/16W	[M]
LB3207	ERJ3GEY0R00V	0 1/16W	[M]
LB3208	ERJ3GEY0R00V	0 1/16W	[M]
LB3210	ERJ3GEY0R00V	0 1/16W	[M]
LB3531	J0JBC0000015	CHIP INDUCTOR	[M]
LB3532	J0JBC0000015	CHIP INDUCTOR	[M]
LB3533	J0JBC0000015	CHIP INDUCTOR	[M]
LB3534	J0JBC0000015	CHIP INDUCTOR	[M]
LB3535	J0JBC0000015	CHIP INDUCTOR	[M]
LB3536	J0JBC0000015	CHIP INDUCTOR	[M]
LB3701	J0JHC0000045	CHIP CAPACITOR	[M]
LB3702	J0JHC0000045	CHIP CAPACITOR	[M]
LB4200	VLP0323A601R	CHIP INDUCTOR	[M]
LB4201	VLP0323A601R	CHIP INDUCTOR	[M]
LB4202	ERJ3GEY0R00V	0 1/16W	[M]
LB4203	ERJ3GEY0R00V	0 1/16W	[M]
LB4204	ERJ3GEY0R00V	0 1/16W	[M]
LB4205	ERJ3GEY0R00V	0 1/16W	[M]
LB4206	ERJ3GEY0R00V	0 1/16W	[M]
LB4214	ERJ3GEY0R00V	0 1/16W	[M]
LB4215	ERJ3GEY0R00V	0 1/16W	[M]
LB4216	ERJ3GEY0R00V	0 1/16W	[M]
LB4217	ERJ3GEY0R00V	0 1/16W	[M]
LB5201	JALBK2HS470T	CHIP INDUCTOR	[M]
LB5202	VLP0323A601R	CHIP INDUCTOR	[M]
LB5203	VLP0155-T	CHIP BEAD	[M]
LB5204	VLP0155-T	CHIP BEAD	[M]
LB5205	VLP0323A601R	CHIP INDUCTOR	[M]
LB5206	VLP0323A601R	CHIP INDUCTOR	[M]
LB6061	J0JBC0000015	CHIP INDUCTOR	[M]
LB6062	J0JBC0000015	CHIP INDUCTOR	[M]
LB6063	J0JBC0000015	CHIP INDUCTOR	[M]
LB6064	J0JBC0000015	CHIP INDUCTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
LB6065	J0JBC0000015	CHIP INDUCTOR	[M]
LB6066	J0JBC0000015	CHIP INDUCTOR	[M]
LB6067	J0JBC0000015	CHIP INDUCTOR	[M]
LB6068	J0JBC0000015	CHIP INDUCTOR	[M]
LB6069	J0JBC0000015	CHIP INDUCTOR	[M]
LB6070	J0JBC0000015	CHIP INDUCTOR	[M]
LB6071	J0JBC0000015	CHIP INDUCTOR	[M]
LB6201	VLP0323A601R	CHIP INDUCTOR	[M]
LB6202	VLP0155-T	CHIP BEAD	[M]
LB6221	VLP0323A601R	CHIP INDUCTOR	[M]
LB6501	VLP0323A601R	CHIP INDUCTOR	[M]
LB6502	VLP0323A601R	CHIP INDUCTOR	[M]
LB6512	VLP0155-T	CHIP BEAD	[M]
LB6513	VLP0155-T	CHIP BEAD	[M]
LB6514	VLP0155-T	CHIP BEAD	[M]
LB6515	VLP0157-T	CHIP INDUCTOR	[M]
LR1041	VLP0392-T	CHIP INDUCTOR	[M]
		SWITCHES	
S551	RSH1A005-1U	SWITCH	[M]
S6401	EVQ11G07K	SW STOP	[M]
S6402	EVQ11G07K	SW PAUSE	[M]
S6403	EVQ11G07K	SW PLAY	[M]
S6404	EVQ11G07K	SW DISC EXCHANGE	[M]
S6405	EVQ11G07K	SW DISC SKIP	[M]
S6406	EVQ11G07K	SW REVERSE	[M]
S6407	EVQ11G07K	SW FORWARD	[M]
S6408	EVQ11G07K	SW OPEN/CLOSE	[M]
S6409	EVQ11G07K	SW POWER	[M]
S6410	EVQ11G07K	SW A. SRD	[M]
S6411	EVQ11G07K	SW CD SEQ	[M]
		SWITCHES	
SW2501	RSH1A048-A	SW LEAF	[M]
		CONNECTORS	
CN501	RJS1A6714-Q	14P CONNECTOR	[M]
CN551	RJS2A1506	6P CONNECTOR	[M]
CN6001	K1MN35A00001	FFC CONNECTOR	[M]
CN6002	RJS1A6814	FFC CONNECTOR	[M]
CN6003	RJS1A6606T1	TAPING CONNECTOR	[M]
CN6401	RJS1A6235-1	CONNECTOR	[M]
PS3201	K1KB22A00025	CONNECTOR	[M]
PS4201	K1KB14A00037	CONNECTOR	[M]
PS6201	K1MN10A00030	CONNECTOR	[M]
		COILS & TRANSFORMERS	
L1001	ELF15N005A	COIL	[M] ⚠
L1111	G0A100H00014	INDUCTOR	[M]
L1115	ELELN100KA	COIL	[M]
L1131	VLQEL05T330K	COIL	[M]
L1141	VLQEL05T330K	COIL	[M]
L1151	G0A220G00018	INDUCTOR	[M]
L2001	G1C100K00020	CHIP INDUCTOR	[M]
L3091	G1C100K00020	CHIP INDUCTOR	[M]
L3092	G1C100K00020	CHIP INDUCTOR	[M]
L3501	G0C220JA0019	AXIAL INDUCTOR	[M]
L3503	ELJFCR39KF	CHIP INDUCTOR	[M]
L3505	ELJFCR68JF	CHIP INDUCTOR	[M]
L3701	G1C220JA0010	CHIP INDUCTOR	[M]
L4211	G1C220KA0038	CHIP CAPACITOR	[M]
L5201	ELJEA100KF	CHIP INDUCTOR	[M]
L5202	ELJEA100KF	CHIP INDUCTOR	[M]
L5251	ELJEA100KF	CHIP INDUCTOR	[M]
L6001	RLQA101JT1-Y	AXIAL COIL	[M]
L6401	ELEPL221KA	INDUCTOR	[M]
L6501	G1C220KA0038	CHIP CAPACITOR	[M]
L6502	G1C220KA0038	CHIP CAPACITOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
T1021	ETS28AV125AC	SWITCHING TRANSFORME	[M] ⚠
		OSCILLATORS	
X6001	EF0EC8004T4	CERAMIC OSCILLATOR	[M]
X6501	VSX1044	CRYSTAL	[M]
		DISPLAY TUBE	
FL4201	F1H0J1050018	1 6.3V	[M]
FL6251	F1H0J1050018	1 6.3V	[M]
FL6253	F1H0J1050018	1 6.3V	[M]
FL6254	F1H0J1050018	1 6.3V	[M]
FL6255	F1J1E1040022	0.1 25V	[M]
FL6401	A2BB00000099	FL DISPLAY	[M]
		FUSES	
F1001	K5D162AQ0005	MEDIUM ACTING FUSE	[M] ⚠
ZA1001	EYF52BC	FUSE HOLDER	[M]
ZA1002	EYF52BC	FUSE HOLDER	[M]
ZA1111	K9ZZ00000424	TERMINAL	[M]
ZA4401	K9ZZ00000424	TERMINAL	[M]
ZA4402	K9ZZ00000424	TERMINAL	[M]
ZA4403	K9ZZ00000424	TERMINAL	[M]
ZA6001	K9ZZ00000424	TERMINAL	[M]
		FUSE HOLDERS	
FC502	RWJ4406087KK	6P FLAT CABLE	[M]
FC503	REXX0312	2P WIRE	[M]
FC6401	RWJ5705134SS	5P WIRE	[M]
		FUSE PROTECTOR	
FP2001	K1MN50A00005	CONNECTOR	[M]
FP5201	K1MN30B00098	F/E CONNECTOR	[M]
FP5202	K1MN50B00010	CONNECTOR	[M]
PP3201	K1KA22A00046	22P CONNECTOR	[M]
PP4201	K1KA14A00135	14P CONNECTOR	[M]
PR1171	VSF0015A10T	IC PROTECTOR	[M]
		JACKS	
JK4401	K2YZ09000004	JK	[M]
P1001	K2AB2B000002	AC INLET	[M] ⚠
		RESISTORS	
R1	ERJ3GEY0R00V	0 1/16W	[M]
R5	ERJ3GEY0R00V	0 1/16W	[M]
R1031	ERDS2FJ124T	120K 1/4W	[M]
R1032	ERDS2FJ124T	120K 1/4W	[M]
R1041	ERDS2TJ474T	470K 1/4W	[M]
R1042	ERDS2TJ474T	470K 1/4W	[M]
R1043	ERG2SJ680P	68 2W	[M] ⚠
R1051	ERDS2TJ750T	75 1/4W	[M]
R1052	ERDS2TJ2R2T	2.2 1/4W	[M]
R1053	ERDS2TJ331T	330 1/4W	[M]
R1054	ER0S2THF6800	68 1/4W	[M]
R1101	D0GB750JA019	75 1/16W	[M]
R1102	D1BB1201A028	12 1/16W	[M]
R1103	D1BB1201A028	12 1/16W	[M]
R1104	ERJ3GEYJ561V	560 1/16W	[M]
R1105	ERJ3GEYJ561V	560 1/16W	[M]
R1106	D0GB392JA002	3.9K 1/16W	[M]
R1107	ERJ3GEYJ472V	4.7K 1/16W	[M]
R1108	ERJ3GEYJ561V	560 1/16W	[M]
R1115	ERJ3GEYJ104V	100K 1/16W	[M]
R1116	ERJ3GEYJ102V	1K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R1125	D0GB101JA002	100 1/16W	[M]
R1126	D1BB1201A028	12 1/16W	[M]
R1127	D1BB1201A028	12 1/16W	[M]
R1128	D0GB151JA008	150 1/16W	[M]
R1161	ERJ3GEYJ104V	100K 1/16W	[M]
R1165	ERD25FVJ100T	10 1/4W	[M]
R1166	ERJ3GEYJ472V	4.7K 1/16W	[M]
R1175	ERG1SJ100E	10 1W	[M] ⚠
R2001	ERJ3GEYJ102V	1K 1/16W	[M]
R2011	D0GB332JA002	3.3K 1/16W	[M]
R2012	D0GB563JA002	3.3K 1/16W	[M]
R2013	ERJ3GEY0R00V	0 1/16W	[M]
R2014	D0GB332JA002	3.3K 1/16W	[M]
R2015	ERJ3GEYJ223V	22K 1/16W	[M]
R2016	ERJ3GEY0R00V	0 1/16W	[M]
R2017	D0GB332JA002	3.3K 1/16W	[M]
R2018	ERJ3GEYJ223V	22K 1/16W	[M]
R2019	D0GB332JA002	3.3K 1/16W	[M]
R2020	ERJ3GEYJ223V	22K 1/16W	[M]
R2021	D0GB332JA002	3.3K 1/16W	[M]
R2022	ERJ3GEYJ123V	12K 1/16W	[M]
R2023	D0GB332JA002	3.3 1/16W	[M]
R2024	ERJ3GEYJ123V	12K 1/16W	[M]
R2026	ERJ3GEYJ473V	47K 1/16W	[M]
R2028	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2029	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2030	ERJ3GEYJ103V	10K 1/16W	[M]
R2031	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2032	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2033	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2034	D0GB183JA002	18K 1/16W	[M]
R2035	ERJ3GEYJ822V	8.2K 1/16W	[M]
R2036	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2037	D0GB333JA002	33K 1/16W	[M]
R2038	ERJ3GEYJ102V	1K 1/16W	[M]
R2040	ERJ3GEY0R00V	0 1/16W	[M]
R2041	ERJ3GEYJ470V	47 1/16W	[M]
R2047	ERJ3GEYJ104V	100K 1/16W	[M]
R2048	ERJ3GEYJ104V	100K 1/16W	[M]
R2051	ERJ3GEYJ104V	100K 1/16W	[M]
R2061	ERJ3GEYJ330V	33 1/16W	[M]
R2502	ERJ3GEYJ153V	15K 1/16W	[M]
R2503	ERJ3GEYJ153V	15K 1/16W	[M]
R2504	ERJ3GEYJ823V	82K 1/16W	[M]
R2505	ERJ3GEYJ823V	82K 1/16W	[M]
R2507	D0GF6R8JA017	6.8 1/16W	[M]
R3001	D0GB220JA002	22 1/16W	[M]
R3002	ERJ3GEYJ472V	4.7K 1/16W	[M]
R3003	D0GB101JA002	100 1/16W	[M]
R3004	ERJ3GEYJ221V	220 1/16W	[M]
R3005	ERJ3GEYJ473V	47K 1/16W	[M]
R3007	ERJ3GEY0R00V	0 1/16W	[M]
R3071	ERJ3GEYJ103V	10K 1/16W	[M]
R3080	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3082	ERJ3RBD202V	2K 3W	[M] ⚠
R3083	ERJ3RBD132V	1.3K 3W	[M] ⚠
R3084	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3085	ERJ3RBD183V	18K 3W	[M] ⚠
R3086	ERJ3RBD432V	4.3K 3W	[M] ⚠
R3087	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3088	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3089	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3090	ERJ3RBD272V	2.7K 3W	[M] ⚠
R3101	ERJ3RED750V	75 3W	[M] ⚠
R3102	ERJ3GEYJ330V	33 1/16W	[M]
R3103	ERJ3GEYJ102V	1K 1/16W	[M]
R3106	ERJ3RED750V	75 3W	[M]
R3111	ERJ3RED750V	75 3W	[M]
R3112	ERJ3GEYJ330V	33 1/16W	[M]
R3113	ERJ3GEYJ102V	1K 1/16W	[M]
R3115	ERJ3RED750V	75 3W	[M]
R3117	ERJ3GEYJ330V	33 1/16W	[M]
R3118	ERJ3GEYJ102V	1K 1/16W	[M]
R3261	ERJ3GEYJ103V	10K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R3521	ERJ3GEYJ222V	2.2K 1/16W	[M]
R3522	ERJ3GEYJ103V	10K 1/16W	[M]
R3531	D1BB75R0A012	75 1/16W	[M]
R3532	D1BB75R0A012	75 1/16W	[M]
R3533	D1BB75R0A012	75 1/16W	[M]
R3534	D1BB75R0A012	75 1/16W	[M]
R3535	D1BB75R0A012	75 1/16W	[M]
R3536	D1BB75R0A012	75 1/16W	[M]
R3701	D0GB220JA002	22 1/16W	[M]
R3702	D0GB220JA002	22 1/16W	[M]
R3751	ERJ3RBD222V	2.2K 3W	[M] ⚠
R3752	ERJ3RBD102V	1K 3W	[M] ⚠
R3753	ERJ3RBD102V	1K 3W	[M] ⚠
R3761	ERJ3RBD221V	220 3W	[M] ⚠
R3762	ERJ3GEYJ330V	33 1/16W	[M]
R3763	ERJ3GEYJ102V	1K 1/16W	[M]
R3766	ERJ3RBD221V	220 3W	[M] ⚠
R3767	ERJ3GEYJ330V	33 1/16W	[M]
R3768	ERJ3GEYJ102V	1K 1/16W	[M]
R3771	ERJ3RBD221V	220 3W	[M] ⚠
R3772	ERJ3GEYJ330V	33 1/16W	[M]
R3773	ERJ3GEYJ102V	1K 1/16W	[M]
R4001	ERJ3GEYJ104V	100K 1/16W	[M]
R4002	ERJ3GEYJ104V	100K 1/16W	[M]
R4004	ERJ3GEYJ104V	100K 1/16W	[M]
R4005	ERJ3GEY0R00V	0 1/16W	[M]
R4006	ERJ3GEY0R00V	0 1/16W	[M]
R4009	ERJ3GEYJ103V	10K 1/16W	[M]
R4010	ERJ3GEYJ103V	10K 1/16W	[M]
R4201	ERJ3GEY0R00V	0 1/16W	[M]
R4301	ERJ3GEYJ222V	2.2K 1/16W	[M]
R4302	ERJ3GEYJ223V	22K 1/16W	[M]
R4303	ERJ3GEYJ223V	22K 1/16W	[M]
R4304	ERJ3GEYJ223V	22K 1/16W	[M]
R4311	ERJ3GEYJ104V	100K 1/16W	[M]
R4312	ERJ3GEYD562V	5.6K 1/16W	[M]
R4313	ERJ3GEYD123V	12K 1/16W	[M]
R4321	ERJ3GEYJ104V	100K 1/16W	[M]
R4322	ERJ3GEYD562V	5.6K 1/16W	[M]
R4323	ERJ3GEYD123V	12K 1/16W	[M]
R4391	D0GB683JA002	68K 1/16W	[M]
R4392	D0GB683JA002	68K 1/16W	[M]
R4393	ERJ3GEYJ473V	47K 1/16W	[M]
R4395	D0GB333JA002	33K 1/16W	[M]
R4396	ERJ3GEYJ473V	47K 1/16W	[M]
R4401	ERJ3GEYJ222V	2.2K 1/16W	[M]
R4402	ERJ3GEYJ103V	10K 1/16W	[M]
R4403	D0GB332JA002	3.3K 1/16W	[M]
R4411	ERJ3GEYJ473V	47K 1/16W	[M]
R4412	D0GB821JA002	820 1/16W	[M]
R4413	D0GB821JA002	820 1/16W	[M]
R4414	ERJ3GEYJ221V	220 1/16W	[M]
R4421	ERJ3GEYJ473V	47K 1/16W	[M]
R4422	D0GB821JA002	820 1/16W	[M]
R4423	D0GB821JA002	820 1/16W	[M]
R4424	ERJ3GEYJ221V	220 1/16W	[M]
R4441	ERJ3GEYJ473V	47K 1/16W	[M]
R4442	D0GB821JA002	820 1/16W	[M]
R4443	D0GB821JA002	820 1/16W	[M]
R4444	ERJ3GEYJ221V	220 1/16W	[M]
R4445	D0GB821JA002	820 1/16W	[M]
R4446	D0GB821JA002	820 1/16W	[M]
R4447	ERJ3GEY0R00V	0 1/16W	[M]
R4485	D0GB332JA002	3.3K 1/16W	[M]
R4487	D0GB332JA002	3.3K 1/16W	[M]
R5203	D0GB563JA002	56K 1/16W	[M]
R5204	ERJ3GEYJ223V	22K 1/16W	[M]
R5211	ERJ3GEYJ2R2V	2.2 1/16W	[M]
R5212	ERJ12YJ270H	27 1/2W	[M] ⚠
R5213	ERJ3GEYJ473V	47K 1/16W	[M]
R5214	ERJ3GEYJ223V	22K 1/16W	[M]
R5215	ERJ3GEYJ2R2V	2.2 1/16W	[M]
R5216	ERJ12YJ270H	27 1/2W	[M] ⚠
R5217	ERJ3GEYJ473V	47K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R5221	ERJ3GEYJ822V	8.2K 1/16W	[M]
R5222	ERJ3GEYJ822V	8.2K 1/16W	[M]
R5232	ERJ3RBD123V	12K 3W	[M] ⚠
R5235	D0GB105JA002	1M 3W	[M] ⚠
R5236	ERJ3GEY0R00V	0 1/16W	[M]
R5252	ERJ3GEYJ102V	1K 1/16W	[M]
R6011	ERJ3GEYJ473V	47K 1/16W	[M]
R6012	ERJ3GEYJ222V	2.2K 1/16W	[M]
R6021	ERJ3GEYJ103V	10K 1/16W	[M]
R6022	ERJ3GEYJ103V	10K 1/16W	[M]
R6023	ERJ3GEYJ103V	10K 1/16W	[M]
R6024	ERJ3GEY0R00V	0 1/16W	[M]
R6025	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6026	ERJ3GEY0R00V	0 1/16W	[M]
R6031	ERJ3GEYJ103V	10K 1/16W	[M]
R6032	ERJ3GEYJ103V	10K 1/16W	[M]
R6033	ERJ3GEYJ103V	10K 1/16W	[M]
R6061	ERJ3GEYJ681V	680 1/16W	[M]
R6062	ERJ3GEYJ681V	680 1/16W	[M]
R6063	ERJ3GEYJ681V	680 1/16W	[M]
R6065	ERJ3GEYJ681V	680 1/16W	[M]
R6066	ERJ3GEYJ681V	680 1/16W	[M]
R6067	ERJ3GEYJ681V	680 1/16W	[M]
R6071	ERJ3GEYJ103V	10K 1/16W	[M]
R6072	ERJ3GEYJ102V	1K 1/16W	[M]
R6073	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6074	ERJ3GEYJ223V	22K 1/16W	[M]
R6081	ERJ3GEYJ473V	47K 1/16W	[M]
R6082	ERJ3GEYJ473V	47K 1/16W	[M]
R6083	ERJ3GEYJ473V	47K 1/16W	[M]
R6084	ERJ3GEYJ473V	47K 1/16W	[M]
R6085	ERJ3GEYJ473V	47K 1/16W	[M]
R6086	ERJ3GEYJ473V	47K 1/16W	[M]
R6091	ERJ3GEYJ103V	10K 1/16W	[M]
R6201	ERJ3GEYJ103V	10K 1/16W	[M]
R6205	ERJ3GEYJ102V	1K 1/16W	[M]
R6206	ERJ3GEYJ103V	10K 1/16W	[M]
R6208	ERJ3GEYJ102V	1K 1/16W	[M]
R6301	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6303	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6401	ERJ3GEYJ102V	1K 1/16W	[M]
R6402	ERJ3GEYJ102V	1K 1/16W	[M]
R6404	D0GB680JA019	68 1/16W	[M]
R6405	D0GB680JA019	68 1/16W	[M]
R6407	D0GB821JA002	820 1/16W	[M]
R6408	ERJ3GEYJ102V	1K 1/16W	[M]
R6409	D0GB122JA019	1.2K 1/16W	[M]
R6410	D0GB152JA002	1.5K 1/16W	[M]
R6411	ERJ3GEYJ182V	1.8K 1/16W	[M]
R6412	D0GB821JA002	820 1/16W	[M]
R6413	ERJ3GEYJ102V	1K 1/16W	[M]
R6414	D0GB821JA002	820 1/16W	[M]
R6415	ERJ3GEYJ102V	1K 1/16W	[M]
R6417	ERJ3GEYJ182V	1.8K 1/16W	[M]
R6418	D0GB272JA002	2.7K 1/16W	[M]
R6484	D0GB680JA019	68 1/16W	[M]
R6485	D0GB680JA019	68 1/16W	[M]
R6494	D0GB680JA019	68 1/16W	[M]
R6495	D0GB680JA019	68 1/16W	[M] ⚠
R6512	ERJ3RBD331V	330 3W	[M]
R6513	ERJ3GEYJ103V	10K 1/16W	[M]
R6514	ERJ3GEYJ470V	47 1/16W	[M]
R6515	D0GB100JA002	10 1/16W	[M]
K3001	ERJ3GEY0R00V	0 1/16W	[M]
K3011	ERJ3GEY0R00V	0 1/16W	[M]
K3012	ERJ3GEY0R00V	0 1/16W	[M]
K3013	ERJ3GEY0R00V	0 1/16W	[M]
K3106	ERJ3GEY0R00V	0 1/16W	[M]
K3112	ERJ3GEY0R00V	0 1/16W	[M]
K3117	ERJ3GEY0R00V	0 1/16W	[M]
K3201	ERJ3GEY0R00V	0 1/16W	[M]
K3501	ERJ3GEY0R00V	0 1/16W	[M]
K3505	ERJ3GEY0R00V	0 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
K3507	ERJ3GEY0R00V	0 1/16W	[M]
K4011	ERJ3GEY0R00V	0 1/16W	[M]
K4012	ERJ3GEY0R00V	0 1/16W	[M]
K4022	ERJ3GEY0R00V	0 1/16W	[M]
K4024	ERJ3GEY0R00V	0 1/16W	[M]
K4026	ERJ3GEY0R00V	0 1/16W	[M]
K6091	ERJ3GEY0R00V	0 1/16W	[M]
K6092	ERJ3GEY0R00V	0 1/16W	[M]
K6095	ERJ3GEY0R00V	0 1/16W	[M]
K6201	ERJ3GEY0R00V	0 1/16W	[M]
K6254	ERJ6GEY0R00V	0 1/16W	[M]
K6301	ERJ3GEY0R00V	0 1/16W	[M]
RA2061	EXBV4V330JV	33 1/16W	[M]
RA2501	EXBV8V473JV	47K 1/16W	[M]
RA3008	EXBV4V103JV	10K 1/16W	[M]
RA3009	EXBV4V221JV	220 1/16W	[M]
RA3011	EXBV4V473JV	47K 1/16W	[M]
RA3012	EXBV8V331JV	330 1/16W	[M]
RA3013	EXBV8V331JV	330 1/16W	[M]
RA3701	EXBV8V220JV	22 1/16W	[M]
RA3702	EXBV4V101JV	100 1/16W	[M]
RA3751	EXBV8V331JV	330 1/16W	[M]
RA3752	EXBV8V331JV	330 1/16W	[M]
RA3753	EXBV8V331JV	330 1/16W	[M]
RA3754	EXBV8V331JV	330 1/16W	[M]
RA3755	EXBV4V331JV	330 1/16W	[M]
RA3756	EXBV4V101JV	100 1/16W	[M]
RA4001	EXBV4V473JV	47K 1/16W	[M]
RA4002	EXBV8V104JV	100K 1/16W	[M]
RA4003	EXBV4VR000V	0 1/16W	[M]
RA4004	EXBV8VR000V	0 1/16W	[M]
RA4005	EXBV4VR000V	0 1/16W	[M]
RA4006	EXBV4VR000V	0 1/16W	[M]
RA5231	EXBV8V101JV	100 1/16W	[M]
RA6201	EXBV4V103JV	10K 1/16W	[M]
RA6202	EXBV4V103JV	10K 1/16W	[M]
RA6203	EXBV4V103JV	10K 1/16W	[M]
RA6204	EXBV4V103JV	10K 1/16W	[M]
RA6205	EXBV8V473JV	47K 1/16W	[M]
RA6206	EXBV4V103JV	10K 1/16W	[M]
RA6207	EXBV4V472JV	4.7K 1/16W	[M]
		CAPACITORS	
C1001	VCF0183M683	83 100V	[M]
C1002	VCF0183M683	83 100V	[M]
C1003	VCK0299E102	99 250V	[M]
C1005	VCK0299E222	99 250V	[M]
C1011	ECA2EHG470E	47 250V	[M]
C1012	ECA2EHG470E	47 250V	[M]
C1021	F1B2H4710002	470P 500V	[M]
C1031	F1B2H1820001	1800P 500V	[M]
C1041	ECQB1H223JF4	0.022 50V	[M]
C1051	ECQB1H104JF4	0.1 50V	[M]
C1052	ECQB1H683JF4	0.068 50V	[M]
C1053	ECQB1H104JF4	0.1 50V	[M]
C1101	ECQV1H104JL2	0.1 50V	[M]
C1102	ECQB1H223JF4	0.022 50V	[M]
C1111	VCEA1AJH102B	1000P 10V	[M]
C1112	VCEA1AJC102B	1000P 10V	[M]
C1115	ECUV1E104ZFV	0.1 25V	[M]
C1116	ECA1AM221B	220 10V	[M]
C1117	ECA0JM102B	1000 6.3V	[M]
C1121	VCEA1AJH102B	1000P 10V	[M]
C1125	ECUV1E104ZFV	0.1 25V	[M]
C1126	ECJ1VB1H102K	1000P 50V	[M]
C1127	ECA0JM102B	1000 6.3V	[M]
C1131	VCEA1EJH181B	180P 25V	[M]
C1141	VCEA1EJH181B	180P 25V	[M]
C1151	VCEA1EJH271B	270P 25V	[M]
C1153	VCEA1EJC221B	220P 25V	[M]
C1154	ECA1AM221B	220 10V	[M]
C1161	VCEA1HJH560B	56P 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C1165	ECJ1VB1H103K	0.01 50V	[M]
C1166	ECA1CM100B	10 16V	[M]
C1171	VCEA1AJH181B	180P 10V	[M]
C2001	F2G0J331A015	330P 6.3V	[M]
C2002	ECEV0GA101SR	100 4V	[M]
C2003	ECUVNC104ZFV	0.1 16V	[M]
C2004	ECUVNC104ZFV	0.1 16V	[M]
C2005	ECUVNC104ZFV	0.1 16V	[M]
C2006	ECUVNC104ZFV	0.1 16V	[M]
C2007	ECUVNC104ZFV	0.1 16V	[M]
C2008	ECUVNC104ZFV	0.1 16V	[M]
C2009	ECUVNC104ZFV	0.1 16V	[M]
C2010	ECUVNC104ZFV	0.1 16V	[M]
C2011	ECUVNC104ZFV	0.1 16V	[M]
C2015	ECUVNC104ZFV	0.1 16V	[M]
C2021	F1H1H822A022	8200P 50V	[M]
C2022	F1H1C393A089	0.039 16V	[M]
C2023	ECJ1VB1H681K	680P 50V	[M]
C2024	ECJ1VB1H681K	680P 50V	[M]
C2025	F1H1C473A088	0.047 16V	[M]
C2026	F1H1C473A088	0.047 16V	[M]
C2027	ECJ1VB1H332K	3300P 50V	[M]
C2028	ECUV1H152KBV	1500P 50V	[M]
C2029	ECUV1H152KBV	1500P 50V	[M]
C2030	ECJ1VB1H471K	470P 50V	[M]
C2031	ECJ1VB1H332K	3300P 50V	[M]
C2032	F1H1C473A088	0.047 16V	[M]
C2033	ECJ1VB1H332K	3300P 50V	[M]
C2034	ECUVNC104KBV	0.1 16V	[M]
C2035	F1H1C473A088	0.047 16V	[M]
C2036	ECJ1VB1H332K	3300P 50V	[M]
C2037	ECJ1VB1H102K	1000P 50V	[M]
C2038	F1H1A474A025	0.47 10V	[M]
C2039	ECJ1VB1H103K	0.01 50V	[M]
C2041	F1J1A2250007	22 10V	[M]
C2042	ECUVNC104KBV	0.1 16V	[M]
C2043	ECUVNC104KBV	0.1 16V	[M]
C2044	ECUVNC104ZFV	0.1 16V	[M]
C2045	ECUV1H101JCV	100P 50V	[M]
C2046	ECUV1C333KBV	0.033 16V	[M]
C2047	ECUVNC104KBV	0.1 16V	[M]
C2048	ECJ1VB1H332K	3300P 50V	[M]
C2051	ECJ1VB1H103K	0.01 50V	[M]
C2052	ECJ1VB1H102K	1000P 50V	[M]
C2061	RCST1AY106RE	10 10V	[M]
C2062	ECUVNC104ZFV	0.1 16V	[M]
C2063	ECUVNC104ZFV	0.1 16V	[M]
C2064	ECUVNC104ZFV	0.1 16V	[M]
C2501	EEVFC0J221P	220P 6.3V	[M]
C2502	ECEV1CA101WP	100 16V	[M]
C2503	ECEV1CA220WR	22 16V	[M]
C2504	ECUVNC104ZFV	0.1 16V	[M]
C2505	ECUVNC104ZFV	0.1 16V	[M]
C2506	ECUVNC104ZFV	0.1 16V	[M]
C2507	ECUVNC104ZFV	0.1 16V	[M]
C2508	ECUVNC104ZFV	0.1 16V	[M]
C2509	EEVFC1C100R	10P 16V	[M]
C2511	ECUVNC104ZFV	0.1 16V	[M]
C2512	ECUVNC104ZFV	0.1 16V	[M]
C2513	ECUVNC104ZFV	0.1 16V	[M]
C3001	F2G0J331A015	330P 6.3V	[M]
C3002	EEVFC0J221P	220P 6.3V	[M]
C3004	F1H1A105A038	10 10V	[M]
C3005	ECUVNC104ZFV	0.1 16V	[M]
C3006	ECUVNC104ZFV	0.1 16V	[M]
C3007	F1H1A105A038	1 10V	[M]
C3008	F1H1A105A038	1 10V	[M]
C3009	ECUVNC104ZFV	0.1 16V	[M]
C3010	ECUVNC104ZFV	0.1 16V	[M]
C3011	ECUVNC104ZFV	0.1 16V	[M]
C3012	F1H1A105A038	1 10V	[M]
C3013	F1H1A105A038	1 10V	[M]
C3014	ECUVNC104ZFV	0.1 16V	[M]
C3015	ECUVNC104ZFV	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C3016	F1H1A105A038	1 10V	[M]
C3017	ECUVNC104ZFV	0.1 16V	[M]
C3018	ECUVNC104ZFV	0.1 16V	[M]
C3019	F1H1A105A038	1 10V	[M]
C3020	F1H1A105A038	1 10V	[M]
C3021	ECUVNC104ZFV	0.1 16V	[M]
C3022	ECUVNC104ZFV	0.1 16V	[M]
C3023	ECUVNC104ZFV	0.1 16V	[M]
C3024	F1H1A105A038	1 10V	[M]
C3025	ECUVNC104ZFV	0.1 16V	[M]
C3026	F1H1A105A038	1 10V	[M]
C3027	ECUVNC104ZFV	0.1 16V	[M]
C3028	ECUVNC104ZFV	0.1 16V	[M]
C3029	ECUVNC104ZFV	0.1 16V	[M]
C3030	F1H1A105A038	1 10V	[M]
C3031	ECUVNC104ZFV	0.1 16V	[M]
C3032	ECUVNC104ZFV	0.1 16V	[M]
C3033	ECUVNC104ZFV	0.1 16V	[M]
C3034	ECUVNC104ZFV	0.1 16V	[M]
C3035	ECUVNC104ZFV	0.1 16V	[M]
C3036	ECJ1VC1H220J	22P 50V	[M]
C3041	ECUVNC104ZFV	0.1 16V	[M]
C3042	ECUVNC104ZFV	0.1 16V	[M]
C3043	ECUVNC104ZFV	0.1 16V	[M]
C3044	ECUVNC104ZFV	0.1 16V	[M]
C3045	ECUVNC104ZFV	0.1 16V	[M]
C3060	ECUVNC104ZFV	0.1 16V	[M]
C3061	ECUVNC104ZFV	0.1 16V	[M]
C3062	ECUVNC104ZFV	0.1 16V	[M]
C3063	ECUVNC104ZFV	0.1 16V	[M]
C3064	ECUVNC104ZFV	0.1 16V	[M]
C3065	F1H1A105A038	1 10V	[M]
C3066	ECUVNC104ZFV	0.1 16V	[M]
C3080	F2G0J331A015	330P 6.3V	[M]
C3081	ECUVNC104ZFV	0.1 16V	[M]
C3082	ECUVNC104ZFV	0.1 16V	[M]
C3083	F1H0J1050013	1 6.3V	[M]
C3084	F1H0J1050013	1 6.3V	[M]
C3085	F1H0J1050013	1 6.3V	[M]
C3086	F1H0J1050013	1 6.3V	[M]
C3087	ECUVNC104ZFV	0.1 16V	[M]
C3088	ECUVNC104ZFV	0.1 16V	[M]
C3089	ECUVNC104ZFV	0.1 16V	[M]
C3100	EEVHB0J101P	100P 6.3V	[M]
C3101	ECUVNC104ZFV	0.1 16V	[M]
C3111	ECUVNC104ZFV	0.1 16V	[M]
C3116	ECUVNC104ZFV	0.1 16V	[M]
C3201	ECEV0GA101SR	100 4V	[M]
C3209	ECUVNC104ZFV	0.1 16V	[M]
C3210	ECUVNC104ZFV	0.1 16V	[M]
C3215	ECUVNC104ZFV	0.1 16V	[M]
C3261	ECUVNC104ZFV	0.1 16V	[M]
C3501	ECA0JM221B	220 6.3V	[M]
C3502	ECJ1VF1H103Z	0.01 50V	[M]
C3503	ECJ1VF1H103Z	0.01 50V	[M]
C3504	ECJ1VB1H103K	0.01 50V	[M]
C3505	ECEA1CKS470I	47 16V	[M]
C3506	ECEA1CKS470I	47 16V	[M]
C3507	ECEA1CKS470I	47 16V	[M]
C3508	ECEA1CKS470I	47 16V	[M]
C3509	ECA0JM102B	1000 6.3V	[M]
C3510	ECEA0JKA101B	100 6.3V	[M]
C3511	ECA0JM102B	1000 6.3V	[M]
C3512	ECEA0JKA101B	100 6.3V	[M]
C3513	ECA0JM102B	1000 6.3V	[M]
C3514	ECEA0JKA101B	100 6.3V	[M]
C3515	ECA0JM331B	330 6.3V	[M]
C3516	ECA0JM331B	330 6.3V	[M]
C3518	ECUV1H470JCV	47P 50V	[M]
C3520	ECUV1H101JCV	100P 50V	[M]
C3531	ECJ1VB1H103K	0.01 50V	[M]
C3532	ECJ1VF1H103Z	0.01 50V	[M]
C3533	ECJ1VF1H103Z	0.01 50V	[M]
C3701	F2G0J331A015	330P 6.3V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C3702	F2G0J331A015	330P 6.3V	[M]
C3703	ECUVNC104ZFV	0.1 16V	[M]
C3704	ECUVNC104ZFV	0.1 16V	[M]
C3705	ECUVNC104ZFV	0.1 16V	[M]
C3706	ECUVNC104ZFV	0.1 16V	[M]
C3707	ECUVNC104ZFV	0.1 16V	[M]
C3708	ECUVNC104ZFV	0.1 16V	[M]
C3709	ECUVNC104ZFV	0.1 16V	[M]
C3710	ECUVNC104ZFV	0.1 16V	[M]
C3711	ECUVNC104ZFV	0.1 16V	[M]
C3712	ECUVNC104ZFV	0.1 16V	[M]
C3713	ECUVNC104ZFV	0.1 16V	[M]
C3714	ECUVNC104ZFV	0.1 16V	[M]
C3715	ECUVNC104ZFV	0.1 16V	[M]
C3716	ECUVNC104ZFV	0.1 16V	[M]
C3717	ECUVNC104ZFV	0.1 16V	[M]
C3718	ECUVNC104ZFV	0.1 16V	[M]
C3719	ECUVNC104ZFV	0.1 16V	[M]
C3720	ECEV0GA330SR	33 4V	[M]
C3721	ECUVNC104ZFV	0.1 16V	[M]
C3722	ECJ1VC1H100D	10P 50V	[M]
C3723	ECJ1VC1H100D	10P 50V	[M]
C3724	ECUVNC104ZFV	0.1 16V	[M]
C3731	RCST1AY106RE	10 10V	[M]
C3732	ECUVNC104ZFV	0.1 16V	[M]
C3733	ECUVNC104ZFV	0.1 16V	[M]
C3734	ECUVNC104ZFV	0.1 16V	[M]
C3735	ECUVNC104ZFV	0.1 16V	[M]
C3736	ECUVNC104ZFV	0.1 16V	[M]
C3737	ECUVNC104ZFV	0.1 16V	[M]
C3738	ECUVNC104ZFV	0.1 16V	[M]
C3739	ECUVNC104ZFV	0.1 16V	[M]
C3740	ECUVNC104ZFV	0.1 16V	[M]
C3741	ECUVNC104ZFV	0.1 16V	[M]
C3742	ECUVNC104ZFV	0.1 16V	[M]
C3743	ECUVNC104ZFV	0.1 16V	[M]
C3751	ECUVNC104ZFV	0.1 16V	[M]
C3752	ECUVNC104ZFV	0.1 16V	[M]
C3753	ECUVNC104ZFV	0.1 16V	[M]
C3754	ECUVNC104ZFV	0.1 16V	[M]
C3755	ECUVNC104ZFV	0.1 16V	[M]
C3756	ECUVNC104ZFV	0.1 16V	[M]
C3757	ECUVNC104KBV	0.1 16V	[M]
C3758	F1H0J1050013	10 6.3V	[M]
C3759	ECUVNC104ZFV	0.1 16V	[M]
C3761	ECUVNC104ZFV	0.1 16V	[M]
C3762	ECUVNC104ZFV	0.1 16V	[M]
C3763	ECUVNC104ZFV	0.1 16V	[M]
C3764	ECUVNC104ZFV	0.1 16V	[M]
C3766	ECUVNC104ZFV	0.1 16V	[M]
C3770	EEVHB0J101P	100P 6.3V	[M]
C3771	ECUVNC104ZFV	0.1 16V	[M]
C4001	EEVHB0J330R	33 6.3V	[M]
C4002	EEVHB0J330R	33 6.3V	[M]
C4003	ECUVNC104ZFV	0.1 16V	[M]
C4004	ECUVNC104ZFV	0.1 16V	[M]
C4005	ECUVNC104ZFV	0.1 16V	[M]
C4006	ECUVNC104ZFV	0.1 16V	[M]
C4007	ECUVNC104ZFV	0.1 16V	[M]
C4008	ECUVNC104ZFV	0.1 16V	[M]
C4009	ECUVNC104ZFV	0.1 16V	[M]
C4010	ECUVNC104ZFV	0.1 16V	[M]
C4011	ECUVNC104ZFV	0.1 16V	[M]
C4012	ECUVNC104ZFV	0.1 16V	[M]
C4013	ECUVNC104ZFV	0.1 16V	[M]
C4014	ECUVNC104ZFV	0.1 16V	[M]
C4015	ECUVNC104ZFV	0.1 16V	[M]
C4021	F1H0J1050013	1 6.3V	[M]
C4022	F1H1H103A753	0.01 50V	[M]
C4023	F1H0J1050013	1 6.3V	[M]
C4031	ECUVNC104ZFV	0.1 16V	[M]
C4041	ECUVNC104ZFV	0.1 16V	[M]
C4051	ECUVNC104ZFV	0.1 16V	[M]
C4061	ECUVNC104ZFV	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C4201	F2G0J331A015	330P 6.3V	[M]
C4202	RCST1AY106RE	10 10V	[M]
C4206	F2G0J330A015	33P 6.3V	[M]
C4207	ECUVNC104ZFV	0.1 16V	[M]
C4208	ECUVNC104ZFV	0.1 16V	[M]
C4209	ECUVNC104ZFV	0.1 16V	[M]
C4210	ECUVNC104ZFV	0.1 16V	[M]
C4218	ECUVNC104ZFV	0.1 16V	[M]
C4301	ECA0JM102B	1000 6.3V	[M]
C4304	ECA1EM221B	220 25V	[M]
C4305	ECA1EM221B	220 25V	[M]
C4308	ECUV1E104ZFV	0.1 25V	[M]
C4309	ECA1CAD470XI	47 16V	[M]
C4311	ECA1CAD470XI	47 16V	[M]
C4312	ECUV1H101JCV	100P 50V	[M]
C4313	ECUV1E104ZFV	0.1 25V	[M]
C4314	ECUV1E104ZFV	0.1 25V	[M]
C4321	ECA1CAD470XI	47 16V	[M]
C4322	ECUV1H101JCV	100P 50V	[M]
C4391	ECJ1VB1C223K	0.022 16V	[M]
C4392	ECUV1E104ZFV	0.1 25V	[M]
C4393	ECUV1E104ZFV	0.1 25V	[M]
C4395	ECJ1VB1C223K	0.022 16V	[M]
C4401	ECUV1E104ZFV	0.1 25V	[M]
C4405	ECUV1E104ZFV	0.1 25V	[M]
C4406	ECUV1E104ZFV	0.1 25V	[M]
C4407	ECUV1E104ZFV	0.1 25V	[M]
C4409	ECUV1E104ZFV	0.1 25V	[M]
C4411	ECA1CAD470XI	47 16V	[M]
C4412	ECJ1VC1H102J	1000P 50V	[M]
C4421	ECA1CAD470XI	47 16V	[M]
C4422	ECJ1VC1H102J	1000P 50V	[M]
C4441	ECA1ANK470XI	47 10V	[M]
C4442	ECJ1VC1H102J	1000P 50V	[M]
C4491	F2A0J470A179	47P 6.3V	[M]
C4492	ECUV1E104ZFV	0.1 25V	[M]
C5201	EEVHB1C100R	10P 16V	[M]
C5202	EEVHB1C100R	10P 16V	[M]
C5203	ECUVNC104ZFV	0.1 16V	[M]
C5204	ECUVNC104ZFV	0.1 16V	[M]
C5205	ECJ1VC1H102J	1000P 50V	[M]
C5206	ECJ1VC1H102J	1000P 50V	[M]
C5207	ECJ1VC1H102J	1000P 50V	[M]
C5208	ECJ1VC1H102J	1000P 50V	[M]
C5211	EEVHB0J470R	47P 6.3V	[M]
C5215	EEVHB0J470R	47P 6.3V	[M]
C5221	ECUVNC104ZFV	0.1 16V	[M]
C5223	ECUVNC104ZFV	0.1 16V	[M]
C5224	ECUVNC104KBV	0.1 16V	[M]
C5225	ECUVNC104KBV	0.1 16V	[M]
C5231	ECUV1H101JCV	100P 50V	[M]
C5232	ECUVNC104ZFV	0.1 16V	[M]
C5233	ECUVNC104ZFV	0.1 16V	[M]
C5234	ECJ1VB1H222K	2200P 50V	[M]
C5235	F1H1H391A765	390P 50V	[M]
C5236	ECJ1VC1H102J	1000P 50V	[M]
C5237	ECUVNC104KBV	0.1 16V	[M]
C5238	F1H1A2240004	0.22 10V	[M]
C5239	ECUVNC104KBV	0.1 16V	[M]
C5240	F1H1H561A765	560P 50V	[M]
C5242	ECJ1VB1H472K	4700P 50V	[M]
C5251	ECUVNC104ZFV	0.1 16V	[M]
C5252	VCS1AS106R	10 10V	[M]
C5253	ERJ3GEYJ472V	4.7K 1/16W	[M]
C6001	ECEA0JKA331Q	330 6.3V	[M]
C6002	ECUV1C104ZFV	0.1 16V	[M]
C6004	ECEA1HKA330B	33 50V	[M]
C6011	ECEA0JKA331Q	330 6.3V	[M]
C6012	ECUV1C104ZFV	0.1 16V	[M]
C6031	ECJ1VF1H103Z	0.01 50V	[M]
C6032	ECJ1VF1H103Z	0.01 50V	[M]
C6033	ECJ1VF1H103Z	0.01 50V	[M]
C6041	ECJ1VB1H331K	330P 50V	[M]
C6042	ECJ1VB1H331K	330P 50V	[M]

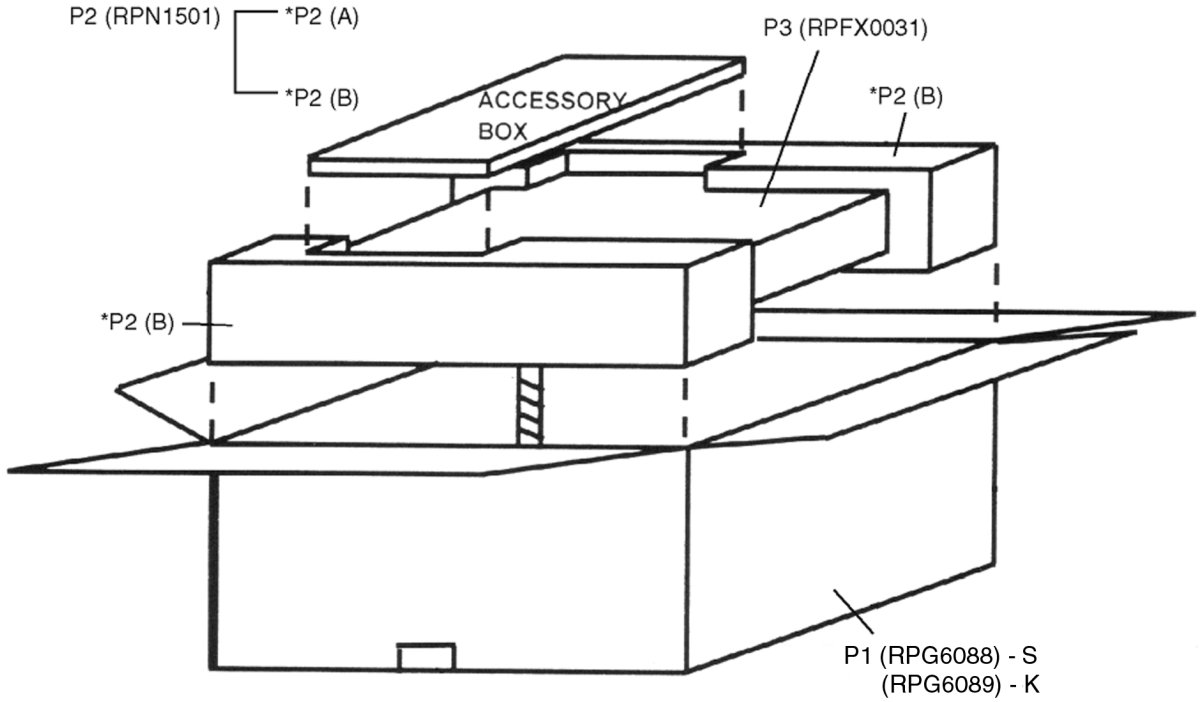
Ref. No.	Part No.	Part Name & Description	Remarks
C6061	ECEA1CKS470I	47 16V	[M]
C6065	ECJ1VB1H103K	0.01 50V	[M]
C6201	EEVHB0J330R	33 6.3V	[M]
C6202	ECUVNC104ZFV	0.1 16V	[M]
C6203	ECUVNC104ZFV	0.1 16V	[M]
C6204	ECUVNC104ZFV	0.1 16V	[M]
C6205	ECUVNC104ZFV	0.1 16V	[M]
C6206	ECUVNC104ZFV	0.1 16V	[M]
C6211	ECUV1H101JCV	100P 50V	[M]
C6221	ECUVNC104ZFV	0.1 16V	[M]
C6222	ECUVNC104ZFV	0.1 16V	[M]
C6251	ECUVNC104KBV	0.1 16V	[M]
C6252	RCST1AY106RE	10 10V	[M]
C6257	EEVHB0J101P	100P 6.3V	[M]
C6301	ECUVNC104ZFV	0.1 16V	[M]
C6302	ECUVNC104KBV	0.1 16V	[M]
C6303	ECUVNC104ZFV	0.1 16V	[M]
C6304	ECUVNC104ZFV	0.1 16V	[M]
C6305	ECUVNC104ZFV	0.1 16V	[M]
C6401	ECEA0JKA470B	47 6.3V	[M]
C6402	F1H1H103A753	0.01 50V	[M]
C6501	EEVHB0J330R	33 6.3V	[M]
C6502	EEVHB0J330R	33 6.3V	[M]
C6503	ECUVNC104ZFV	0.1 16V	[M]
C6504	ECUVNC104ZFV	0.1 16V	[M]
C6505	ECUVNC104ZFV	0.1 16V	[M]
C6511	ECJ1VC1H150J	15P 50V	[M]
C6512	ECJ1VC1H150J	15P 50V	[M]

19.4. Packing Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPG6088	PACKING CASE	[M]S
P1	RPG6089	PACKING CASE	[M]K
P2	RPN1501	POLYFOAM	[M]
P3	RPFX0031	MIRAMAT BAG	[M]
		ACCESSORIES	

Ref. No.	Part No.	Part Name & Description	Remarks
A1	N2QAJB000051	REMOTE CONTROL	[M]
A1-1	RKK-HTR0283	R/C BATTERY COVER	[M]
A2	RJA0065-A	AC CORD	[M] ⚠
A3	RQT6519-P	O/I BOOK (En)	[M]
A3	RQT6520-C	O/I BOOK (Cf)	[M]
A4	K2KA6CA00001	A/V CORD	[M]

19.5. Packaging



20 Additional Contents

20.1. Differences of Spindle Motor Assembly (RXQ0749B)

	Reason for Change *The circled item indicates the reason. If no marking, see the Notes in the bottom column.
	1. Improve performance
	2. Change of material or dimension
	3. To meet approved specification
	4. Standardization
	5. Addition
	6. Deletion
	7. Correction
O	8. Other

	Interchangeability Code **The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.			
		Parts	Set Production	
	A	Original → New	Early → Late	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
	B	Original → New	Early → Late	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
	C	Original → New	Early → Late	New parts only may be used in early or late production sets. Stock new parts.
	D	Original → New	Early → Late	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
O	E	Other		

Important Information when replacing the Spindle Motor Assembly (RXQ0749B)

Please refer to this supplement regarding the use of 2 types of SPM assemblies and their differences.

・Since May 2002 production, the projection in the Traverse base of the (SPM) Spindle Motor Assembly has been modified and the inner stopper has been deleted.

Therefore, in the course of servicing DVD changers and DVD Home Theater systems, you will encounter 2 types of SPM assemblies.

The 2 types of SPM assemblies are described below.

1. **The original Type A (with the inner stopper)**
2. **The revised Type B (without the inner stopper)**

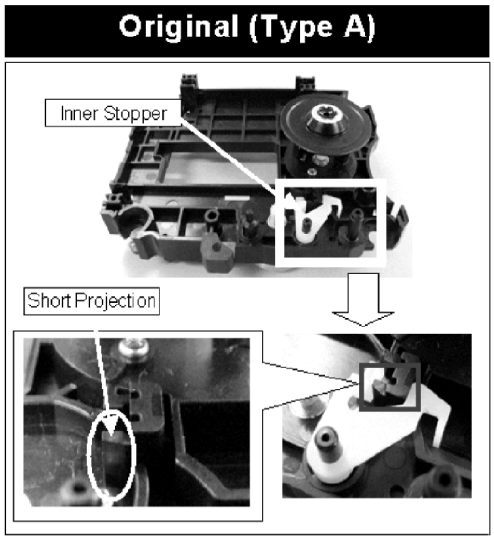
Refer to the pictures in section 1.1

・In addition, there are two types of Spindle Motor Assemblies (SPM) supplied as replacement parts.

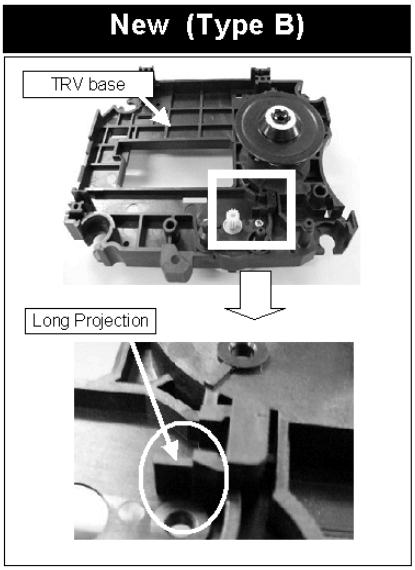
They are SPM Type (1) [short projection WITH inner stopper] and Type (2) [short projection WITHOUT inner stopper].

Refer to the pictures in section 1.2

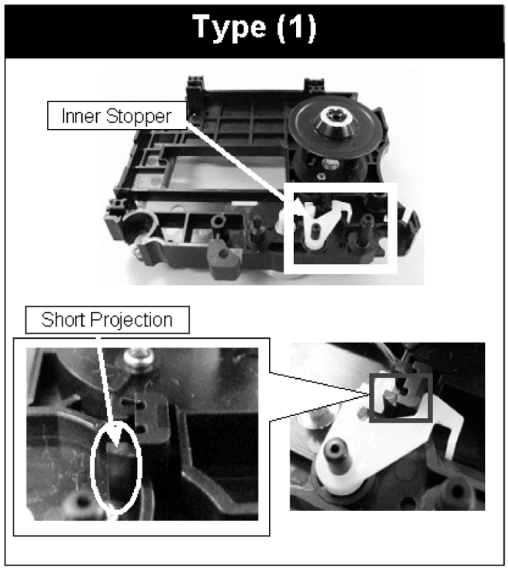
20.1.1. Spindle Motor Assembly used in Products

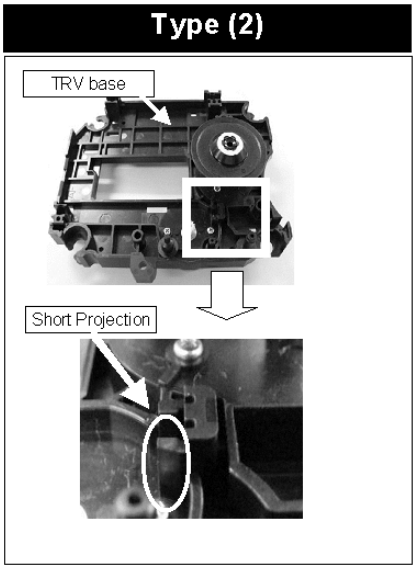


The TRV base which has a projection has to be equipped with an inner stopper



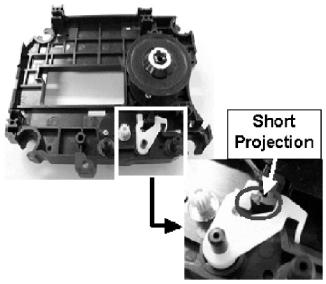
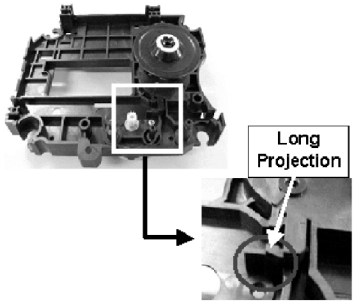
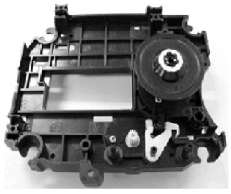
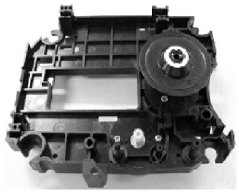
20.1.2. Spindle Motor Assembly for service parts (RXQ0749B)





20.1.3. Remedy

Please confirm the SPM Assembly type in the repair unit first, and take proper remedy in repair service for respective combination, refer to the table below.

SPM Assembly used in the products / SPM Assembly for Service parts	Type (A) Short projection with an Inner stopper	Type (B) Long projection without an Inner stopper
		
Type (1) Short projection with an inner stopper 	When Type (A) is replaced with Type (1) Just replace a service part Type (1) with repair unit.	When Type (B) is replaced with Type (1) Just replace a service part Type (1) with repair unit. * Be sure to keep the inner stopper in the service part Type (1).
Type (2) Short projection without an inner stopper 	When Type (A) is replaced with Type (2) Remove an inner stopper from the repair unit Type (A) and install it into the service part Type (2). Then, replace a service part Type (2) with repair unit.	When type (A) is replaced with type (2) Please order an inner stopper (RMX0192) Additionally order an inner stopper and install it into a service part Type (2). Then,replace a service part Type (2) with repair unit.

* In order to prevent any confusion in the service field, the supplier (SPC) will supply only Type (1) as service parts from end of September, 2003.

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